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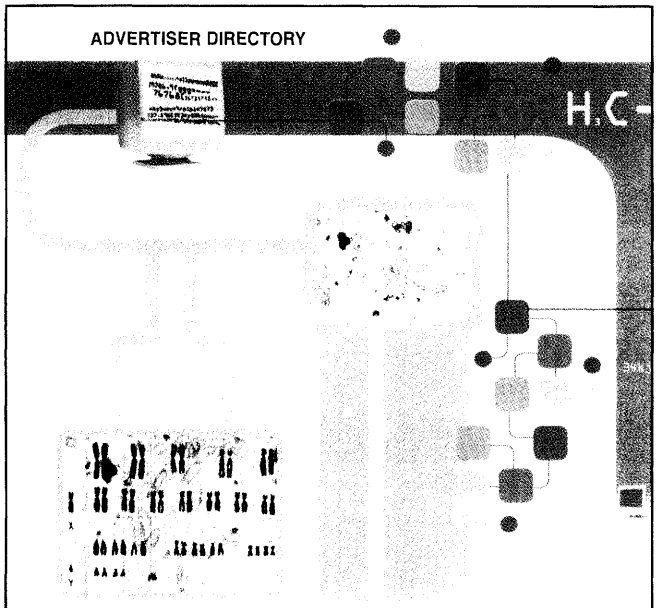

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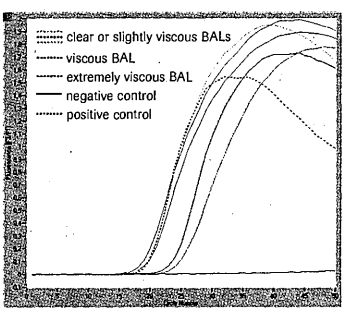
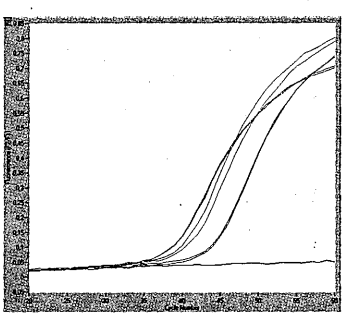


DNA from six different *S. aureus*-positive BAL research samples, analyzed by LightCycler PCR.



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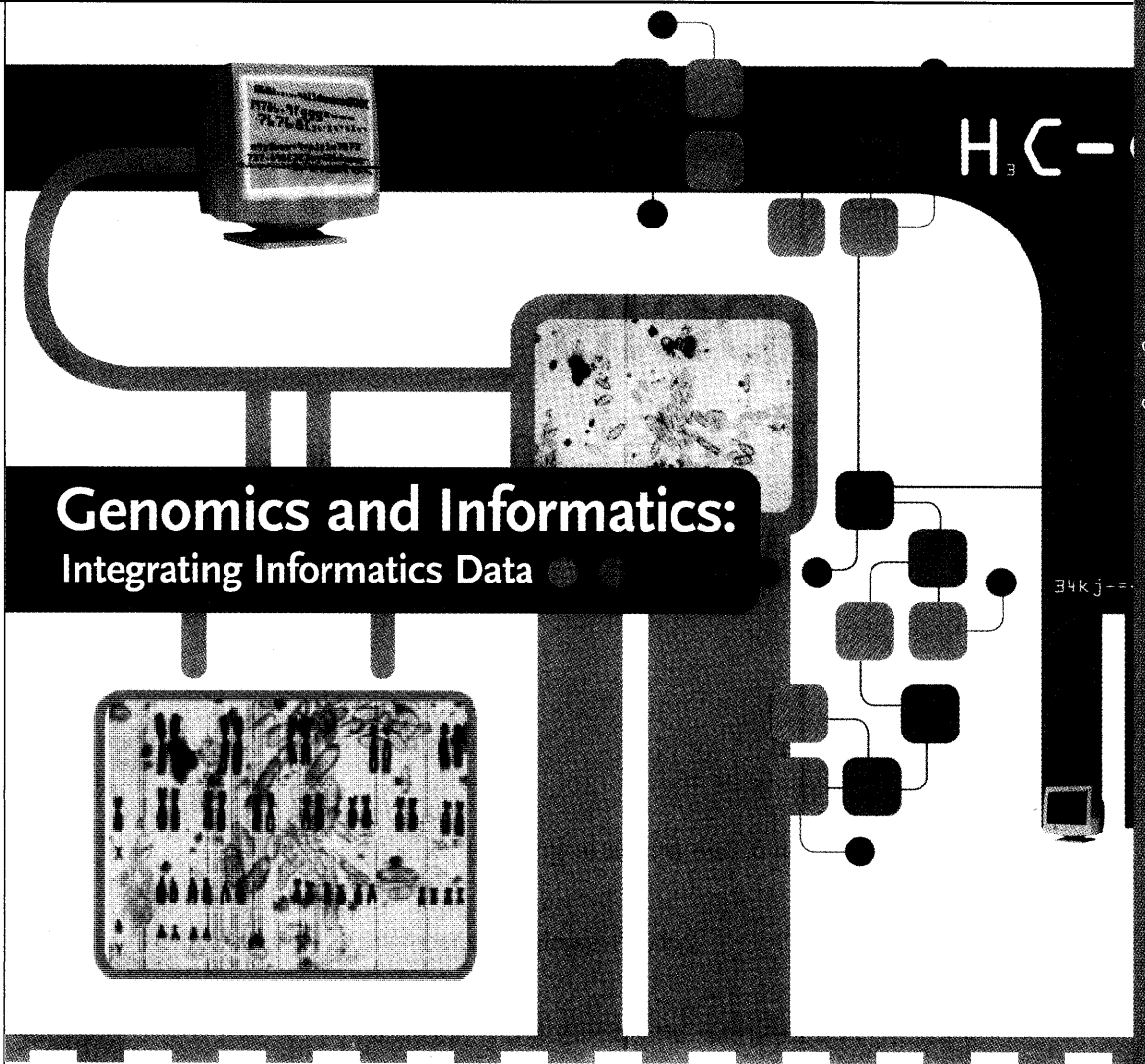

Genomics and Informatics:
Integrating Informatics Data

The large volumes of data generated from genome sequencing projects will pale in comparison to the mountains of even more complex information that lie just ahead. Analyzing disparate data from genomics, bioinformatics, proteomics, pathways, and more demands new tools and techniques.

BY MIKE MAY AND GARY HEEBNER

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After so many years of waiting—stretching back to the discovery of DNA's overall structure in 1953—the scientific community embraced the publication of the human genome sequence. In the 16 February 2001 issue of *Science*, an article by Craig Venter's group at **Celera Genomics** detailed the enormity of this project. After completing 27.3 million high quality sequence reads, which provided 5.11-fold coverage of the genome, and mapping 2.1 million single nucleotide polymorphisms, or SNPs, the investigators unveiled 32,000 human genes. Although the total number of genes fell short of what biologists expected, the volume of DNA sequence data created incredible challenges in managing and analyzing information. Consequently, the field of bioinformatics quickly gained prominence.

Thousands of life science and computer science experts worked in laboratories around the world for 15 years to generate the initial draft from the human genome. Nevertheless, more sequencing remains, because the sequence of the human genome is not complete. In addition, investigators will also unravel the genomes of many other organisms. Sequencing is already completed for a few others, including *S. cerevisiae* (baker's yeast) with 12.1 million bases, *C. elegans* (nematode) with 97 million bases, and *D. melanogaster* (fruit fly) with 180 million bases. As with the human project, more sequencing from any genome creates more work in data management and analysis.

When asked what lies ahead, beyond the human genome sequencing project, Robert Waterston, director of the Genome Sequencing Center at **Washington University in St. Louis**, said, "I see more genome sequencing projects, applying this ability to an increasing number of organisms." But he added that every increase in the volume of available data increases the difficulty of searching through it. As a result, he expects even more complexity ahead. "The nice thing about sequencing," he said, "is that it is inherently digital in form. Once we get it, that's it. Expression data is different. It's quantitative and depends on the technique

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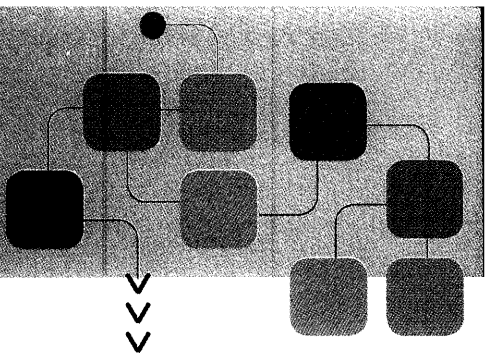

used to generate it." He also sees a need to look at variation and phenotype. He said, "Clearly, associating human phenotypic variation with the underlying sequence is a major challenge." He expects that this will require even more data and statistical analysis.

Today, biologists want to make sense of the sequence data and then turn their attention to the function of genes. Future projects will describe more genes, as well as RNA intermediates, resulting proteins, protein-protein interactions, and more—all producing large volumes of data that are likely to reside in different computer formats on different platforms. So far, biologists find themselves bogged down by the growing volume of data, when they would rather be liberated by it. All of this data could create a new freedom—to discover new genetic relations or create new drugs—but that demands more computational power from computers, enormous increases in data storage, and methods to integrate and analyze results from various experiments and techniques. Many projects under way should resolve these issues and open pathways to unexplored territory.

IN THE BEGINNING

Let's see where this all started. In the early 1980s, the **National Institutes of Health**, working with **Los Alamos National Laboratory**, created a public database called GenBank, which housed short stretches of DNA sequences that were just beginning to be identified by researchers. This probably marked the beginning of the bioinformatics age. In 1982, GenBank contained about 600 DNA sequences, but today more than 12 million squeeze into this information warehouse, which contains sequence information from many organisms. Currently, the **National Center for Biotechnology Information** (NCBI) of the National Institutes of Health manages and builds this database. GenBank is one of three centers—along with the **European Molecular Biology Laboratory** (EMBL) and the **DNA Data Bank of Japan** (DDBJ)—that collaborate in collecting information, which comes almost entirely from submissions of the authors of the data themselves. Scientists can access these data through the Internet and look for similarities and differences between DNA sequences in their search for new genes.

Despite the growing number of sequences housed in GenBank, David J. Lipman, director of NCBI, sees much more work ahead. He said, "I'm sure we'll see more and more of the same kind of computational comparative sequence analyses being done. You'll also see more of the kind of hybrid experiment-computational work being done, like what Celera did for their whole genome shotgun assembly." He added, "Essentially experimental approaches are becoming more feasible and attractive because of the ability to do some of the work in the computer."

In the 1990s, Expressed Sequence Tags—known as ESTs—arrived on the scene. These are short, about 300-500 base pair, single-pass sequence reads from mRNA. Typically they are produced in large batches and represent a snapshot of genes expressed in a given tissue. In the beginning, scientists considered these sequences long, and the growing numbers of them created some analytical challenges. Consequently, several companies capitalized on these sequences in hopes of discovering new genes and ultimately new drug targets. **Incyte Genomics** and **Millennium Pharmaceuticals** represented some of the first players in this business. These organizations believed that the ability to access and study large amounts of this information would provide them with a significant competitive advantage over the more traditional drug hunters. Nevertheless, the large volume created the need for more powerful tools to manage and analyze these sequence data.

Once the **Human Genome Project** got under way, scientists generated even more DNA sequence data. High throughput screening helped investigators sift through more targets in the drug discovery pipeline. Today, scientists can turn to **Sequenom** for a high throughput genotyping system called the MassARRAY. Charles Cantor, Sequenom's chief scientific officer, said, "We have 100,000 proven assays available." He added that this fall Sequenom will introduce a system that can crank out more than one million genotypes per day. Beyond high throughput, Sequenom can also integrate data across subjects. Cantor explained: "We can scan the genotypes in pools from a large number of people. So we can get the average genotype for 300 to 400 people right away. That saves users a factor of 300 to 400 in time and cost." Using this technology, Sequenom plans to scan the entire human genome in a population of 15,000 people by 2002. This process should expose more genes that could be associated with diseases.

SIMPLIFYING THE SOLUTIONS

Sorting through the data being generated by sequencing projects demanded computer programs for data storage, management, and analysis. For instance, one of the most basic methods in bioinformatics compares new DNA sequences to those previously identified as relevant genes. If a new stretch of DNA resembles a gene already

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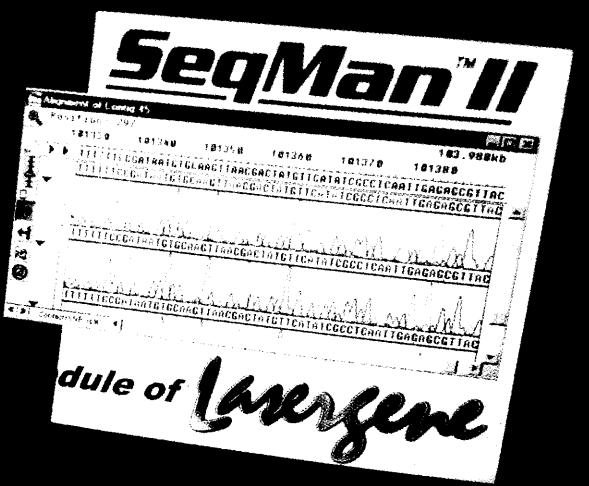
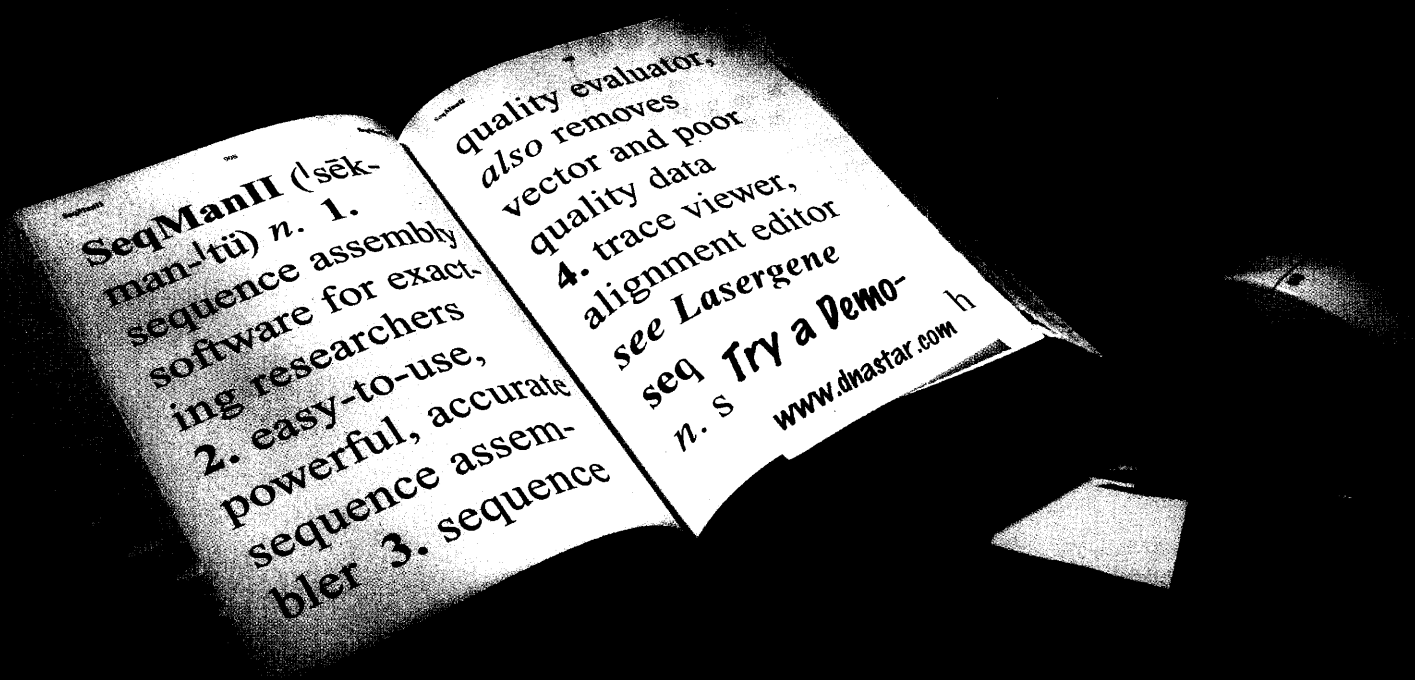
Defining Sequence Assembly





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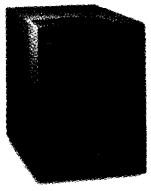

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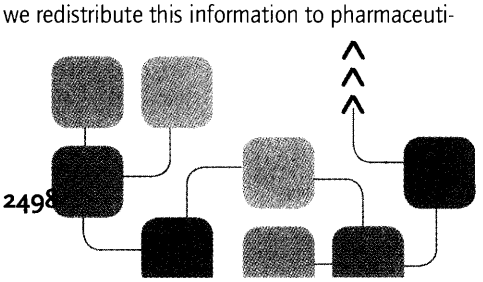
shown to be related to a particular disease, then the new sequence might be targeted as a potential treatment site. One of the software programs developed for searching DNA sequence data is the Basic Local Alignment Search Tool, better known simply as BLAST. This software program is available through NCBI as a part of a suite of programs for database analysis. NCBI also offers other programs for searching databases of three-dimensional protein structures and other biological data platforms. All of these programs make it possible to comb the ever-growing volumes of data.

Keeping biologists on track, however, demands a suite of user friendly tools. Some companies concentrate on creating products with improved interfaces and capabilities. As a result, many instruments evolved from crude, hard-to-program keypads to today's Windows-driven operating systems. **SynApps Software, Inc.**, for example, is a relatively new arrival in this business. According to Skip Martin, president of SynApps: "We help our clients develop products." This work focuses on creating custom software that ranges from automating laboratory processes to data mining and bioinformatics. They also offer a series of tools—including ones that help import data and search it—that attach to commercial products. This lets a customer customize a software package that is already in use. Martin added: "Scientists need flexibility, because technology and approaches to analysis change so rapidly. The architecture that we build can evolve with the changing needs of the organization."

Martin believes that software itself will continue to evolve in ways that make it easier to operate. He said, "When biologists can think and work as biologists—not computer scientists—then they will be more efficient in their work."

In some cases, companies try to enhance data for customers. Douglas Brutlag, chief scientist for **DoubleTwist, Inc.**, said, "We reexamine and reevaluate information from public and private databases and, thereby, add value. Then, we redistribute this information to pharmaceutical companies and biotech firms." This approach could challenge current expectations of the genome. For example, Brutlag said, "We look for genes in several ways, and we find twice the number of genes described in the public databases, or about 70,000." Users of DoubleTwist software can adjust its sensitivity and specificity for customized applications. This company's software also integrates information from a customer's data, other data sources, and various techniques—all put up in a single viewer to analyze. Users can load the software on their machines or use it at DoubleTwist's website. Brutlag added: "I don't think we will know all the human genes until we sequence every mRNA at every stage of development and in every cell." Finding all of the proteins could be an even bigger challenge, because Brutlag said that most genes take an average eight alternatively spliced forms, which could create more than half a million proteins overall.



GROWING NEEDS FOR HANDLING DATA

The data from genome projects, proteomics, and the questions that lie beyond will necessitate powerful software. Accordingly, a growing number of companies offer software for analysis of DNA sequences and protein structures. These products and services often include access to proprietary databases with large volumes of sequence data. For example, **Biomax Informatics AG**, DoubleTwist, Inc., **Entigen**, **LION BioScience**, and others offer suites of bioinformatics programs.

According to Reinhard Schneider, chief executive officer for LION Bioscience Research in Cambridge in the United States, they base part of their software product line on SRS, which stands for sequence retrieval system. Schneider said, "The system links databases such that the users can make single queries that go to more than one database." LION offers additional products and solutions in the areas of sequence analysis, expression profiling, and metabolic pathway analysis. Schneider added: "Our major focus is linking all of our tools together so that users can exchange data between products."

Despite the power of probing databases, Schneider notes that valuable information can be found in other places, too. He said, "Most of the useful information is not in databases, but is in the primary literature. So, we are creating a text mining tool that can, for example, extract protein-protein interactions from **Medline** abstracts." Schneider and his colleagues are working with **Bayer** on a combination of text mining and database access that could be used for various tasks, including starting with a phenotype, such as an early flowering plant, and then trying to find a genotype that provides that feature.

In the end, everyone hopes to use the knowledge created in the genome projects and the studies beyond it. As one example, **Pyrosequencing** moved beyond the genome as fast as it could. Bjorn Ekstrom, executive vice president and chief technical officer, said, "We provide tools for applied genetic analysis that enable the scientists to generate enormous amounts of data to correlate genotypes and phenotypes." In fact, Pyrosequencing's techniques can very accurately analyze 100,000 SNP assays in a day with just two instruments. In addition, the same hardware can perform many other types of assays relevant to applied genomics—including *de novo* sequencing, typing microorganisms, viral load, and allele frequency measurements—by simply changing the software and the reagent kit. Ekstrom said that Pyrosequencing is also working on reducing the assay volumes through microfluidic techniques and arrays, which should continue to decrease the required size of a sample and reduce the cost.

The volumes of data must be put together. Scientists can do that with the Discovery Center™, which **NetGenics** describes as an open, extendable software environment that provides an integrated view of chemical and biological information held in both internal and external repositories. This online system lets customers create an environment that analyzes and displays data through a variety of algorithms and takes data from many sources. Mike Dickson, chief technology officer for NetGenics, said, "Integration will lead to better utilization of knowledge."

Different companies, as one would expect, take different approaches to this field. For

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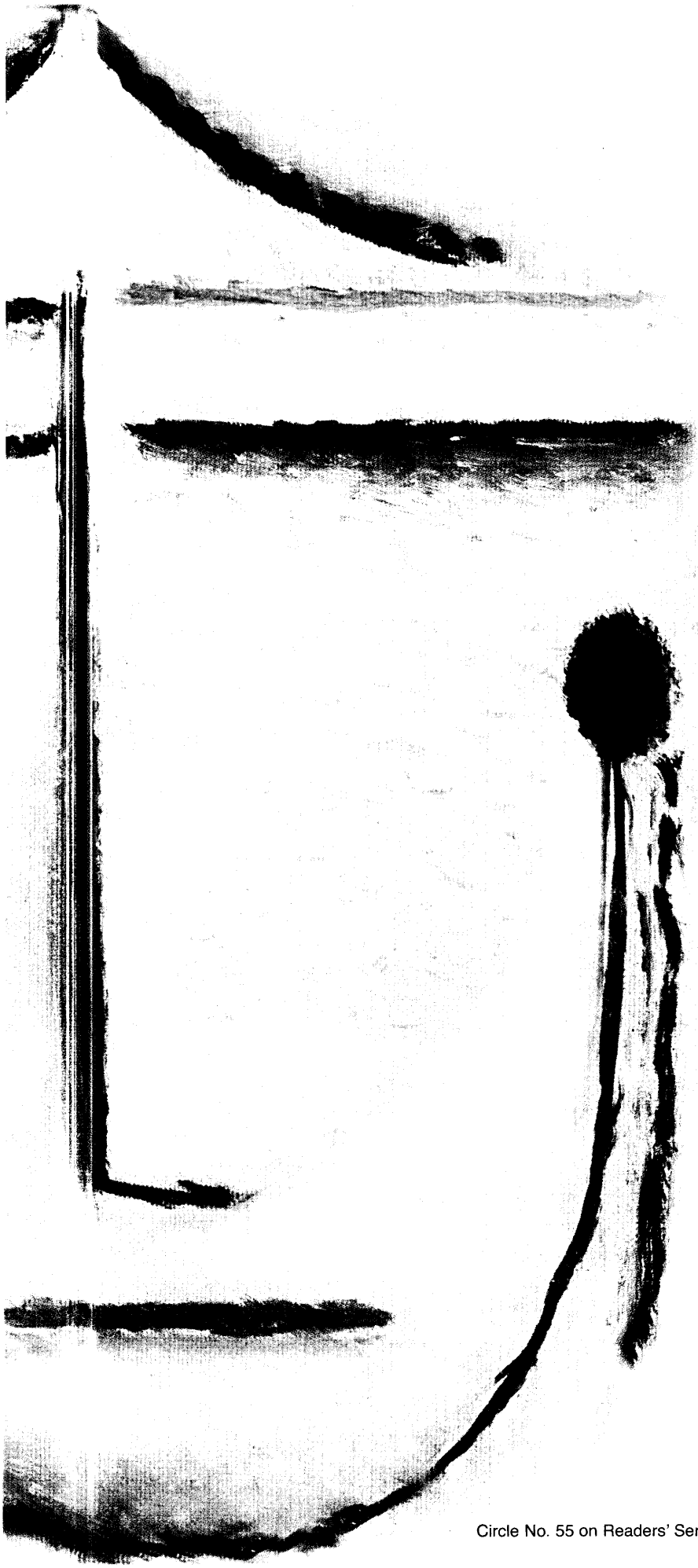

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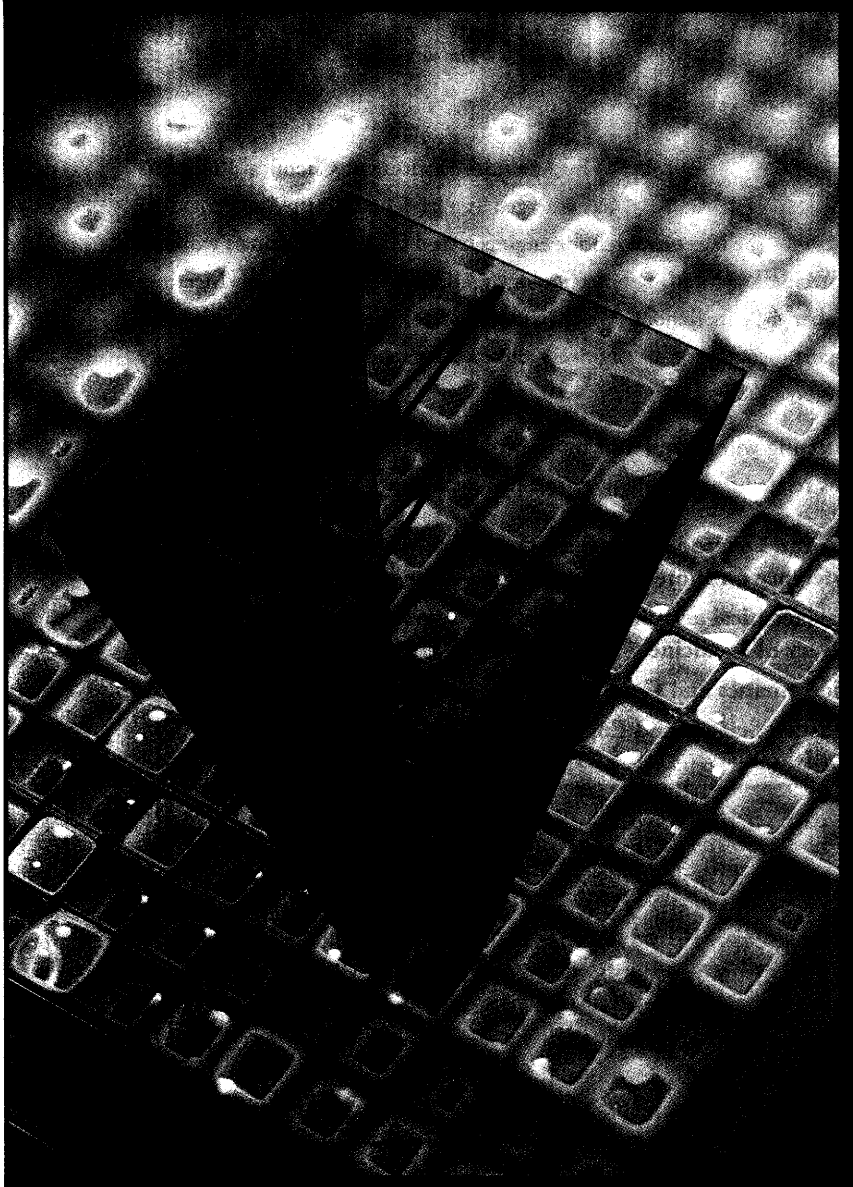

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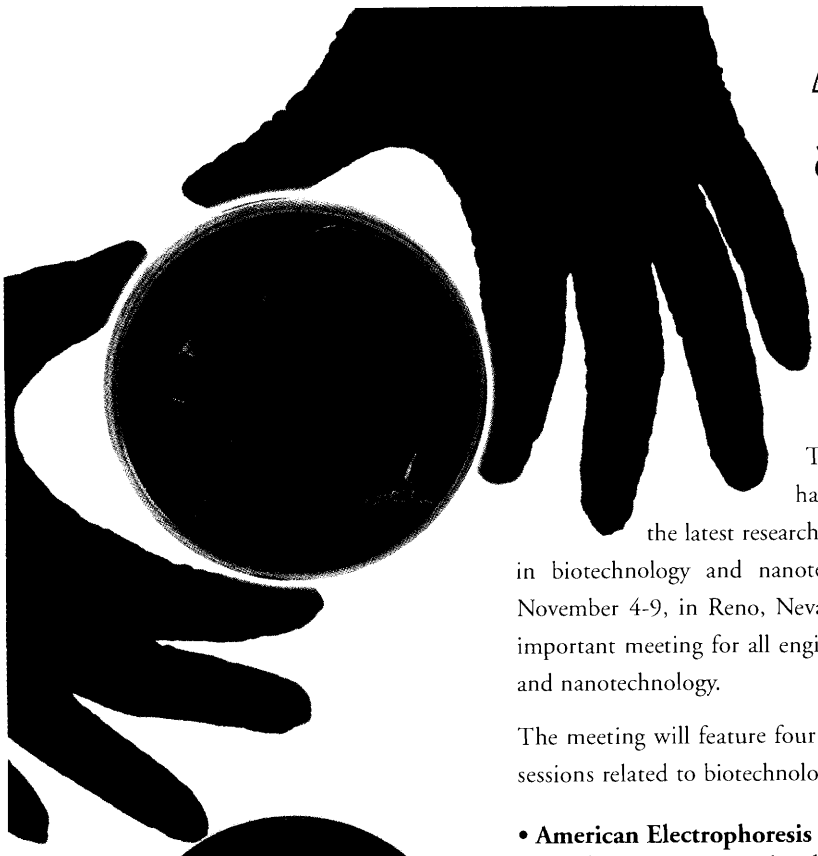

A Close-Up Look at the Future of Biotechnology & Nanotechnology

The American Institute of Chemical Engineers has emerged as a leader committed to providing the latest research for engineers and other professionals working in biotechnology and nanotechnology. AIChE's 2001 Annual Meeting, November 4-9, in Reno, Nevada, is proof of that commitment. This is an important meeting for all engineers and scientists working in biotechnology and nanotechnology.

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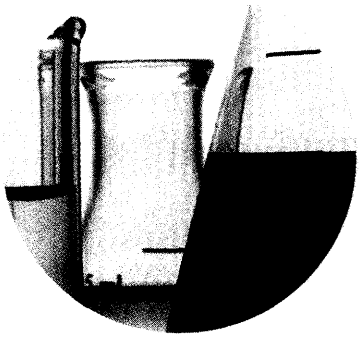
- **American Electrophoresis Society Annual Meeting: A Topical Conference on Biotechnology and Bioengineering**
- **Pharmaceutical and Biotechnology: Discovery, Development, and Delivery of Medicine**
- **Bioinformatics and Genomics**
- **Nanoscale Science and Engineering**



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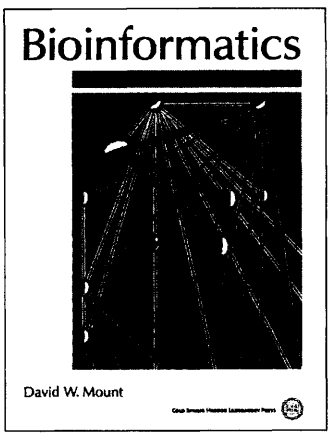

By David W. Mount, *University of Arizona, Tucson*

The application of computational methods to DNA and protein science is a new and exciting development in biology. *Bioinformatics: Sequence and Genome Analysis* is a comprehensive introduction to this emerging field of study.

The book has many unique and valuable features:

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- Examples are presented in simple numerical terms rather than complex formulas and notation
- Theoretical underpinnings are linked to biological problems and their solutions
- Extensive tables provide descriptions and Web sources for a broad range of publicly available software
- An associated Website (www.bioinformaticsonline.org), accessible free of charge by book purchasers, provides links to Internet sources referred to in the text, as well as problem sets for classroom use, and other useful material not included in the text.

Based on the author's extensive experience as a molecular geneticist and bioinformaticist at the University of Arizona, this is a uniquely educational book, ideal as a laboratory reference for investigators and also as teaching reference for graduate and undergraduate students studying this fast-changing discipline.

Here's what the reviewers have to say:

"*Bioinformatics* is for the biologist who wants to learn more about the fundamentals of DNA sequence analysis. An analogy for the target audience would be readers who want to know the components of an automobile that make it go, rather than seeking information on how to drive from Tucson to Santa Fe, or on the physics of an internal combustion engine. This audience is probably the largest and, until now, the most neglected....The text [in *Bioinformatics*] is well formatted and easily read, with many figures and tables. Color is used both effectively and densely. The book is worth purchasing if only for the extensive bibliographies at the end of each chapter. Moreover, the quality and level of explanation in each chapter is generally consistent, something that cannot be said for 'compilation' texts....*Bioinformatics* is an excellent text for the biologist who wants to learn more about the field, and is well worth exploring by the instructor looking to tackle his or her first bioinformatics course."

— Nature Genetics

2001, 564 pp., illus., index
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instance, Klaus Heumann, CEO and founder of Biomax Informatics AG, said, "We are more problem focused, rather than only product focused." He added that today's biologists face heterogeneous problems that off-the-shelf software will not always address comprehensively or efficiently. He said, "We look at all the dimensions of a problem faced by a customer, and then we create a customized solution." Such solutions include global proprietary and public database integration and search capabilities, integration of clustered expression data with functional categories, software for automatic selection of genes for specific disease areas by linguistic analysis from scientific literature databases, and computer simulations of experiments. Furthermore, Biomax offers the unique service of manually annotating complete genomes.

As genomics and its resulting spin-off fields continue to grow, companies have more at stake, from intellectual property rights to economic opportunities. As a result, companies demand security and reliability in software. For some organizations, that means using software that resides on their own company servers. Companies that offer software packages designed for in-house use include **Informax**, **Oxford Molecular Group**, and **Molecular Mining Corporation**. These suppliers create software for use in small laboratories as well as for larger research organizations.

CASHING IN ON CHIPS

Part of the flood of data in molecular biology comes from new collection techniques, including DNA chips. With these miniature devices, investigators can conduct large numbers of experiments on a single small slide, not much different from the ones used in basic light microscopy. Companies that offer ready-to-use microarrays include **Affymetrix, Inc.**, **Genomic Solutions**, and **Mergen, Ltd**. To fabricate custom chips, investigators can turn to **Beckman Coulter, Inc.**, **Genetix Ltd.**, and **GeneMachines**.

A DNA chip, or microarray, literally is DNA on a chip. Oligonucleotides, or cDNAs, make up the DNA part, and the chip is just glass, plastic, or some other material. A chip includes thousands of different DNA sequences in an orderly pattern, essentially on a grid, to serve as probes. In general, an investigator collects mRNA from cells being studied, converts it to cDNA, and applies it to a DNA chip. The cDNA hybridizes with a gene, or DNA sequence, like the one that made it. The cDNA can be tagged—say, with a fluorescent dye—so that the hybridization site can be located. Scanners record the images for digital analysis, and software programs make sense of the thousands of data points. Software programs are available from various companies, including Affymetrix, **BioDiscovery**, **Hitachi Genetic Systems**, and **Silicon Genetics**. The software uses the locations of hybridization sites to determine which sequences are being expressed in test cells.

With the increasing variety in techniques for data generation, collection, and analysis, a biologist could get trapped in a spider web of automation and instrumentation, instead of doing biology. Fortunately, a number of companies tackle the entire product portfolio for both genomic and proteomic research. These companies—including **Amersham Pharmacia Biotech** and **Bio-Rad Laboratories**—develop broad product lines, and make every component compatible with all of the others.

Genomic Solutions focuses exclusively on genomics and proteomics research. This organization assembles the tools and techniques needed for DNA and protein research, and it also offers contract services in both areas. If an organization does not want to invest in the instrumentation needed to perform this research, Genomic Solutions can provide the staff and know-how to do the work and provide the results. Nisha Sahay, manager of genomic production and research services at Genomic Solutions, said, "We're kind of a turn-key solution. We provide a complete package: genomics, proteomics, analysis, and contract research services." She adds, "Every product made here is used by our scientists to provide custom research services, thereby validating the instruments and consumables that are being built at Genomic Solutions."

TEAMING UP ON TECHNOLOGY

The breadth of today's biomedical technology often encourages companies to spread their capabilities by teaming up with other companies. For example, some large pharmaceutical companies build in-house bioinformatics capabilities, and others obtain these skills through partnerships with biotechnology companies that specialize in software for data mining. Both approaches come with benefits and costs. Creating an in-house capability for bioinformatics, for instance, can protect proprietary methods, but it can be a very costly venture, even for a large organization. On the other hand, sending bioinformatics jobs out to another company

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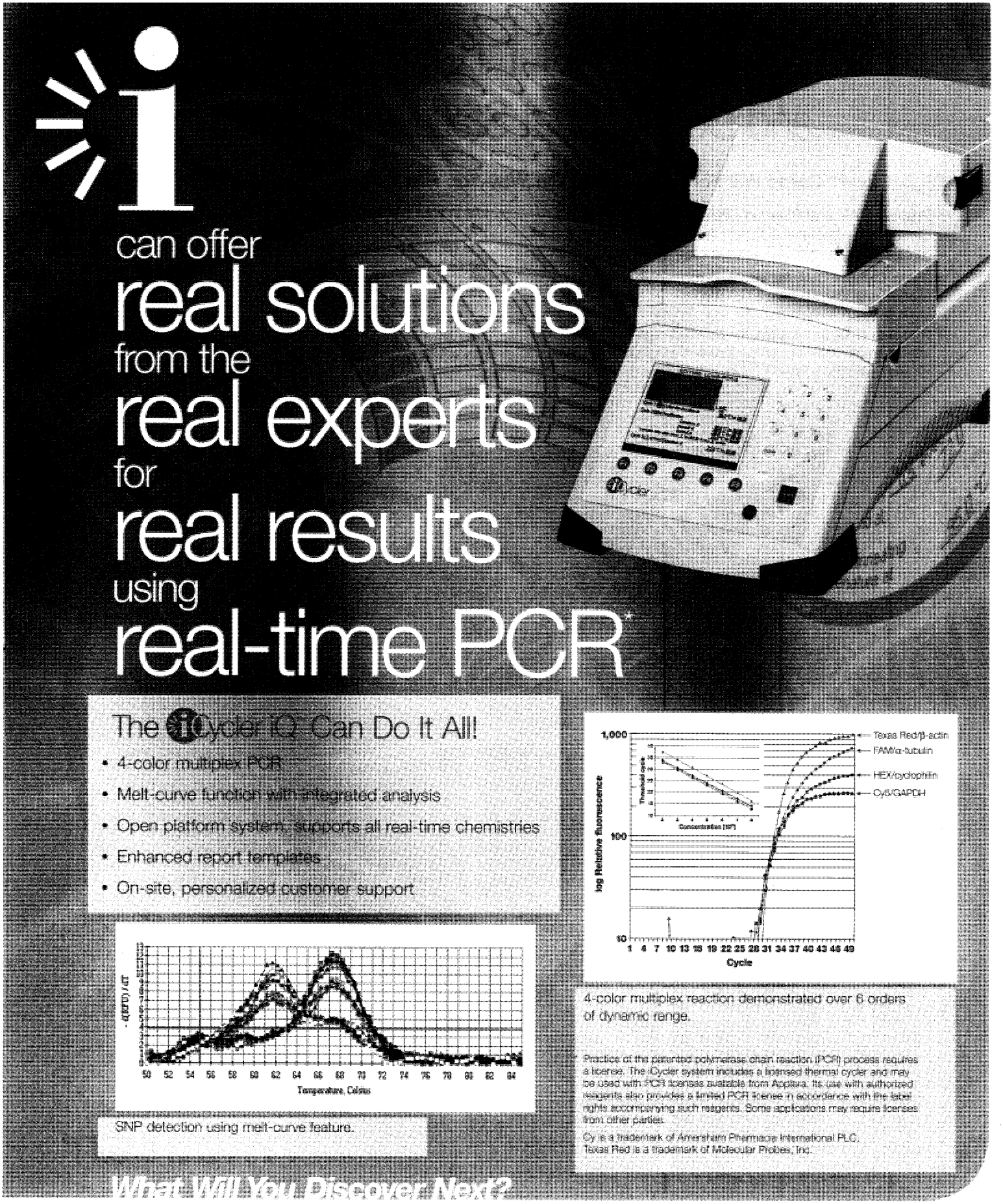
KEEPING UP WITH MICROTECHNOLOGY

From October 28 through November 1, **IBC USA Conferences** will hold its eighth annual Chips to Hits Conference on Microtechnology, which will take place in San Diego, California. This conference covers the latest technology and application of DNA, cell, and protein microarrays, microarray informatics, microfluidics, microfabrication, nanotechnology, and more. The organizers expect 1,500 attendees, including research scientists, marketing and business development experts, members of regulatory agencies, and venture capitalists.

This meeting starts with a day of preconference symposia—on surface chemistry, bioinformatics, nanobiotechnology - and then moves into four days of speakers, poster sessions, and other events. The list of more than 90 speakers includes George Annas of the **Boston University** Schools of Public Health, Law, and Medicine, who will give a keynote address titled "No ethics gene: privacy, property, consent, and community in the genomics era." Participants can also attend talks by Leigh Anderson of **Large Scale Biology Corporation** Joseph Hackett of the **U. S. Food and Drug Administration**, and many others. This conference will also provide over half a dozen product demonstrations and 16 workshops put on by a variety of companies. You can register online or get more information at http://www.chipstohits.com/.



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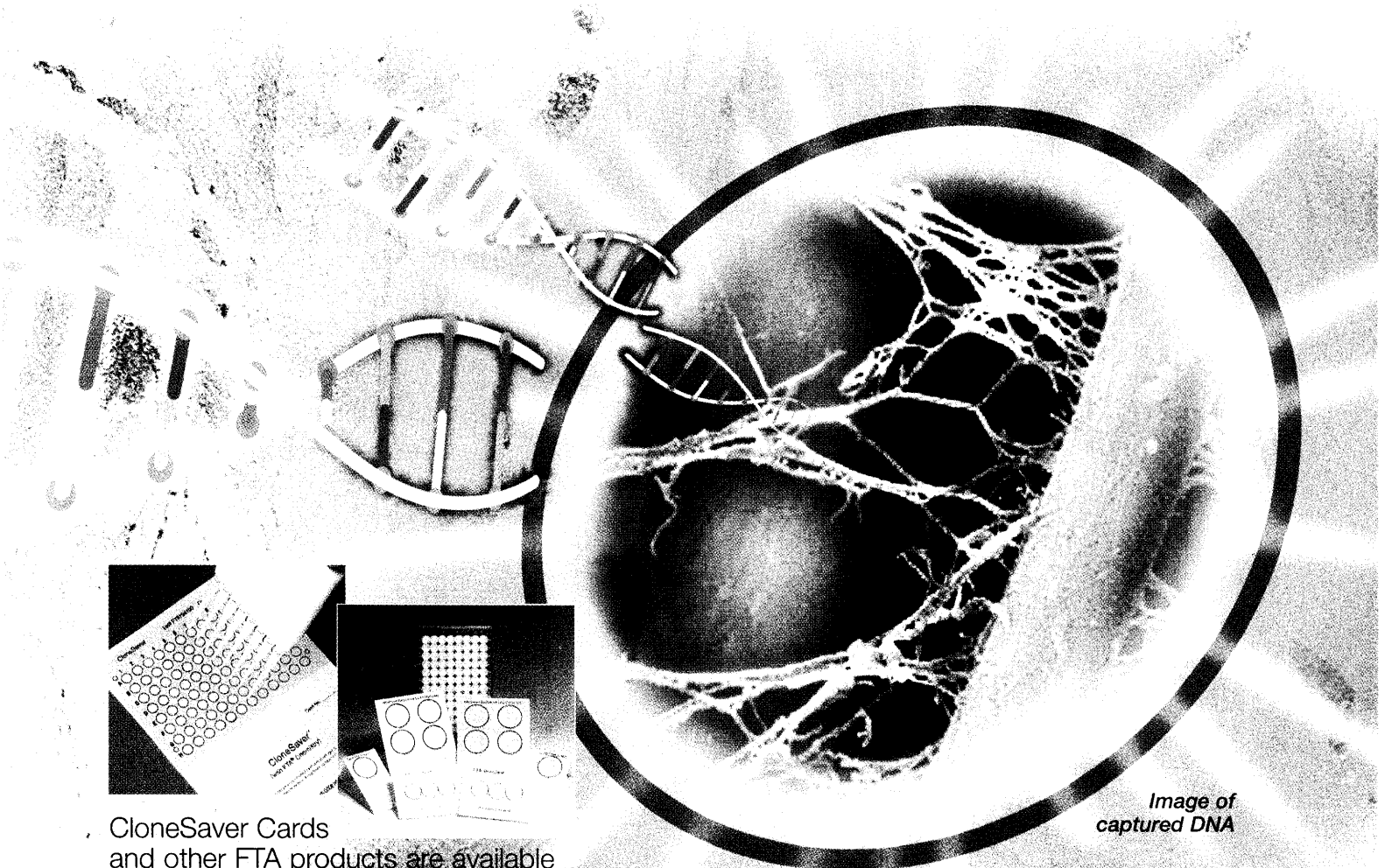

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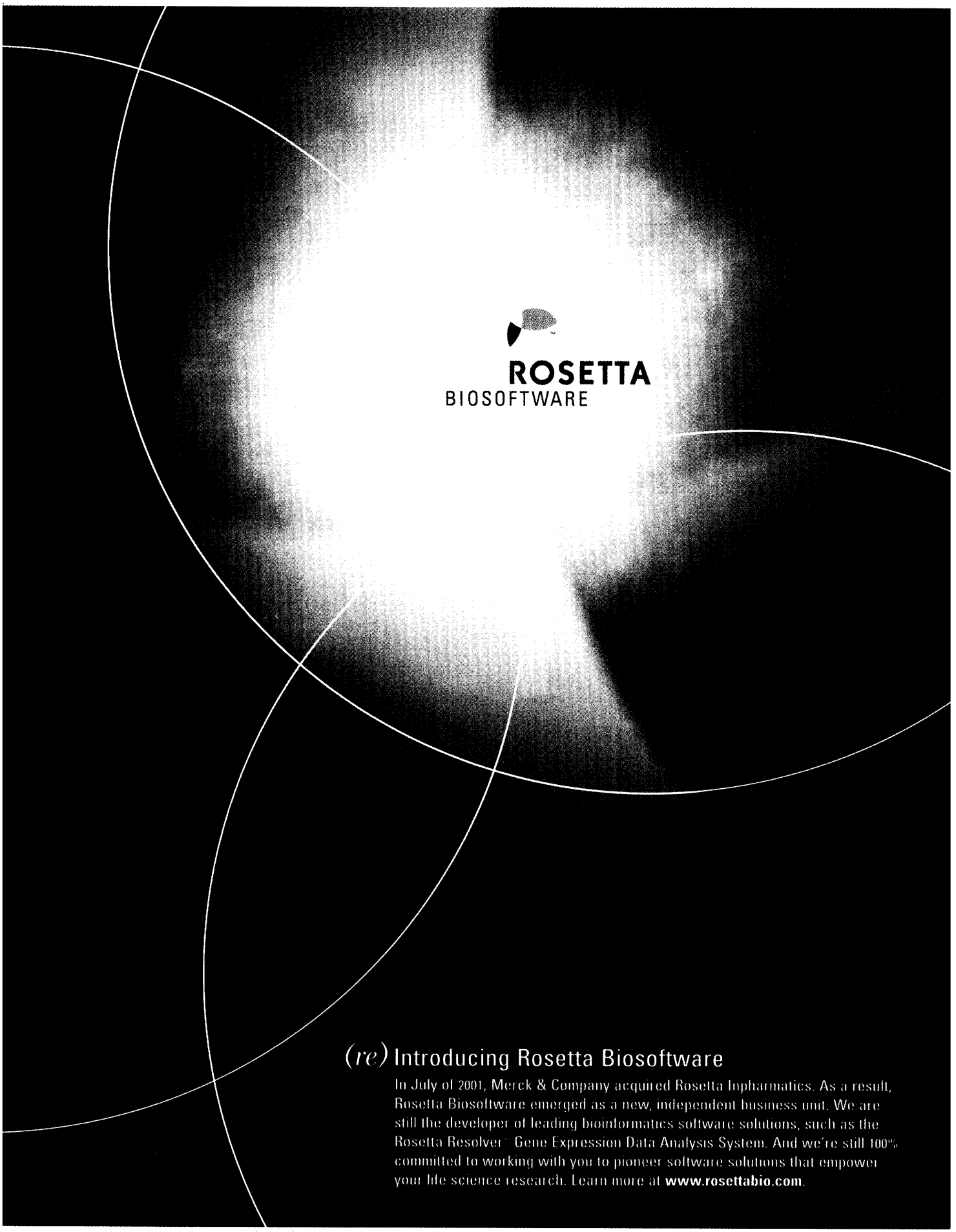

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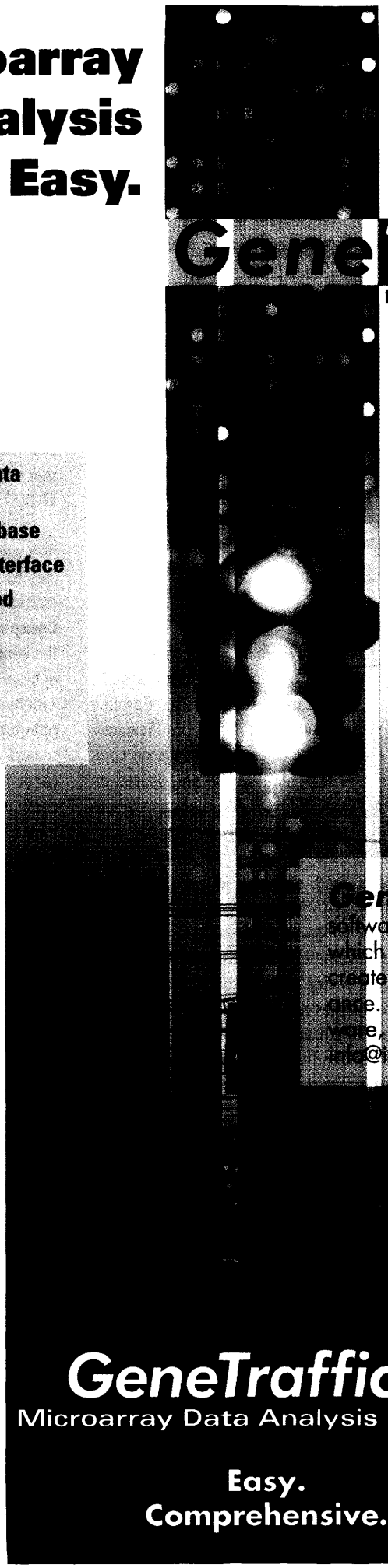

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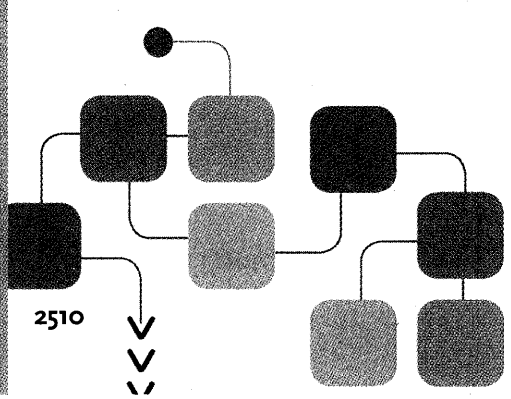
forces a company to disclose certain confidential data to an outside supplier, which might present additional risk.

A quick survey reveals well-known companies on both sides of this partnering strategy. For example, Millennium Pharmaceuticals built extensive data mining capabilities in-house and even provides this service to other companies as a source of additional revenue. **GlaxoSmithKline** also depends on in-house bioinformatics specialists. Alternatively, Celera Genomics, Incyte Genomics, **Rosetta Inpharmatics**, and others supply services in the bioinformatics market. These suppliers work with companies that prefer the flexibility and quick access to new innovations that these suppliers offer.

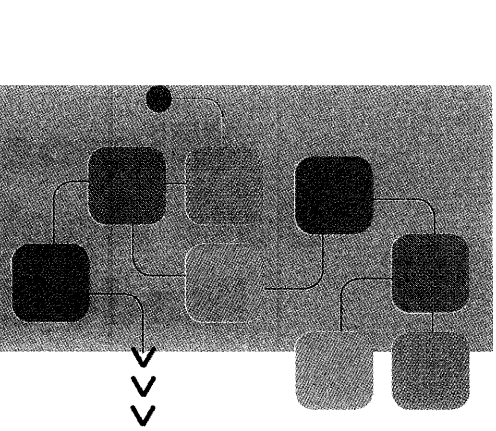
One of the most recent examples of teaming up is **Merck & Co., Inc.**'s ongoing acquisition of Rosetta Inpharmatics. When asked about the expected benefits of this merger, Richard Blevins, director of bioinformatics at Merck, simply said, "Rosetta has the capacity to perform high throughput gene expression studies that are not possible at Merck." So far, though, Blevins thinks that many of the benefits of genomics lie in the future for pharmaceuticals. He said, "The effects of sequencing the human genome are just starting to trickle in here." He did indicate, however, that human sequencing turned up several new genes that could be potential drug targets, but that work remains in the research stage. Still, he said, "Finding a gene does not mean—in any way, shape, or form—that you are closer to a drug target." Instead, he expects to learn more about potential drug targets from the interactions between gene products and pathways. The merger with Rosetta should help Merck explore in greater depth the effects that chemical compounds have on genes and their interactions.



CRANKING UP THE COMPUTING POWER

Although genomics projects alone demanded amazing levels of computing power, future projects will create skyrocketing computational needs. An organism's genome contains many parts, but at least the list remains relatively constant. In contrast, the transcriptome—messenger RNA—generated from the DNA of a living cell and the proteome—proteins—created from the same DNA change from cell to cell and throughout development. Venturing into these dynamic realms requires immense computer storage and seemingly instant computation.

Some of the largest hardware and software companies see these growing needs for computational power in the life sciences, and they are creating separate divisions to attack specific biological problems. According to Caroline Kovac, vice president of **IBM** Life Sciences, today's life sciences research depends on computation. She said, "At IBM, we are focused on three areas: providing systems that can scale to handle the exponential growth in data; integrating the data so that it can be mined for knowledge; and creating knowledge based information systems that support collaboration among the community of scientists from universities, government funded research labs, and the private sector." She added: "What life sciences companies need—close to the top of the list—is a computing infrastructure partner that can deliver end-to-end solutions, including high-performance computing and storage solutions, scalable data management and data integration environments for heterogeneous data, and the capability to put it all together." For instance, IBM's DiscoveryLink data integration software helps scientists integrate and analyze large data sets from multiple databases—in different formats and file types—through a single query. In addition, IBM and **MDS Proteomics** recently formed a nonprofit organization called **blueprint WORLDWIDE, Inc.**, which oversees a public database of protein-protein interactions called the Biomolecular Interaction Network Database, or BIND. This database uses IBM technology for processing, storing, and managing the data.



Biologists will probably need increasing computer power for some time. Siamak H. Zadeh, manager of the life sciences group at **Sun Microsystems, Inc.**, said, "The role of information technology is increasingly pronounced in the life sciences." As a result, biologists are calling for ever more computing power. In fact, Zadeh said that some clients already want petabytes—that's 10,000 trillion bytes—of storage.

In some cases, though, an organization might find ways to use its current computing capabilities to gain more power. Paul Renaud, general manager for the ActiveCluster at **Platform Computing, Inc.**, said, "We've been tackling the central problem of making enough computer cycles available to do the work." Most organizations only use 5 percent to 10 percent of the potential in their desktop computers, and even servers only work to about 30 percent of their capability. That leaves millions and millions of computing cycles unused. Consequently, Platform offers a series of software products, including LSF ActiveCluster, that exploit unused power in an organization's computers. This software can link together anything from desktop PCs to supercomputers, and thereby creates a super-supercomputer to attack the toughest computational problems. Renaud said, "It's about high throughput computing. The more processors you can combine, the more powerful the computer." Moreover, this software even links computers that use different operating systems.

SETTING THE STANDARDS

The wide variety of techniques being employed by many groups in biomedical research creates data in many formats and on assorted computer platforms. Consequently, investigators struggle when they try to extract meaningful information from a handful of different databases. To use all of these data effectively, informatics needs uniform standards for how information is housed and exchanged. The beginning of such standards started with the Interoperable Informatics Infrastructure Consortium (I3C), which was announced at the recent BIO 2001 Conference. This group consists of an assortment of organi-

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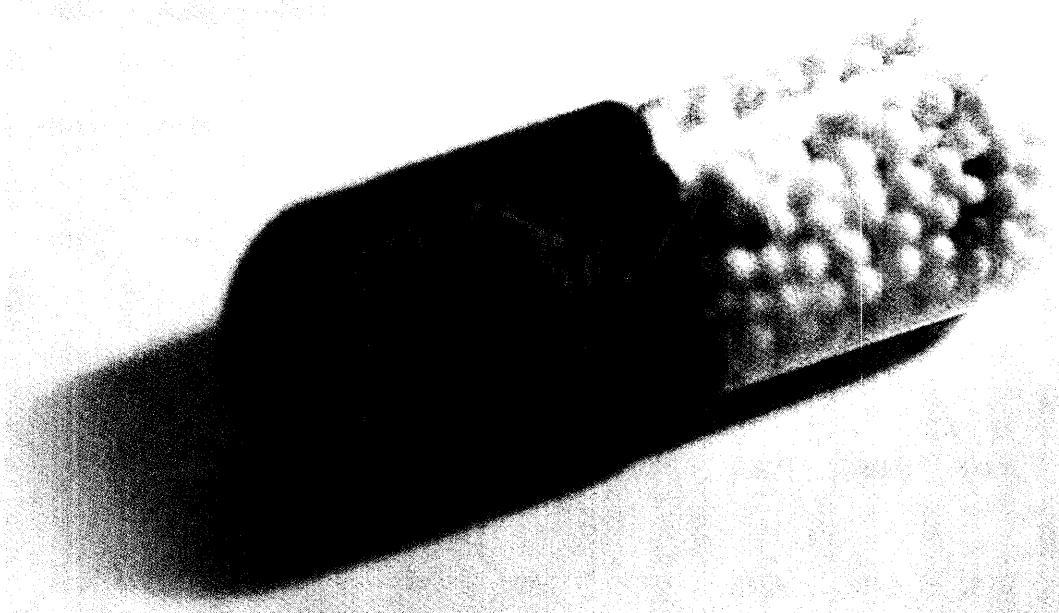

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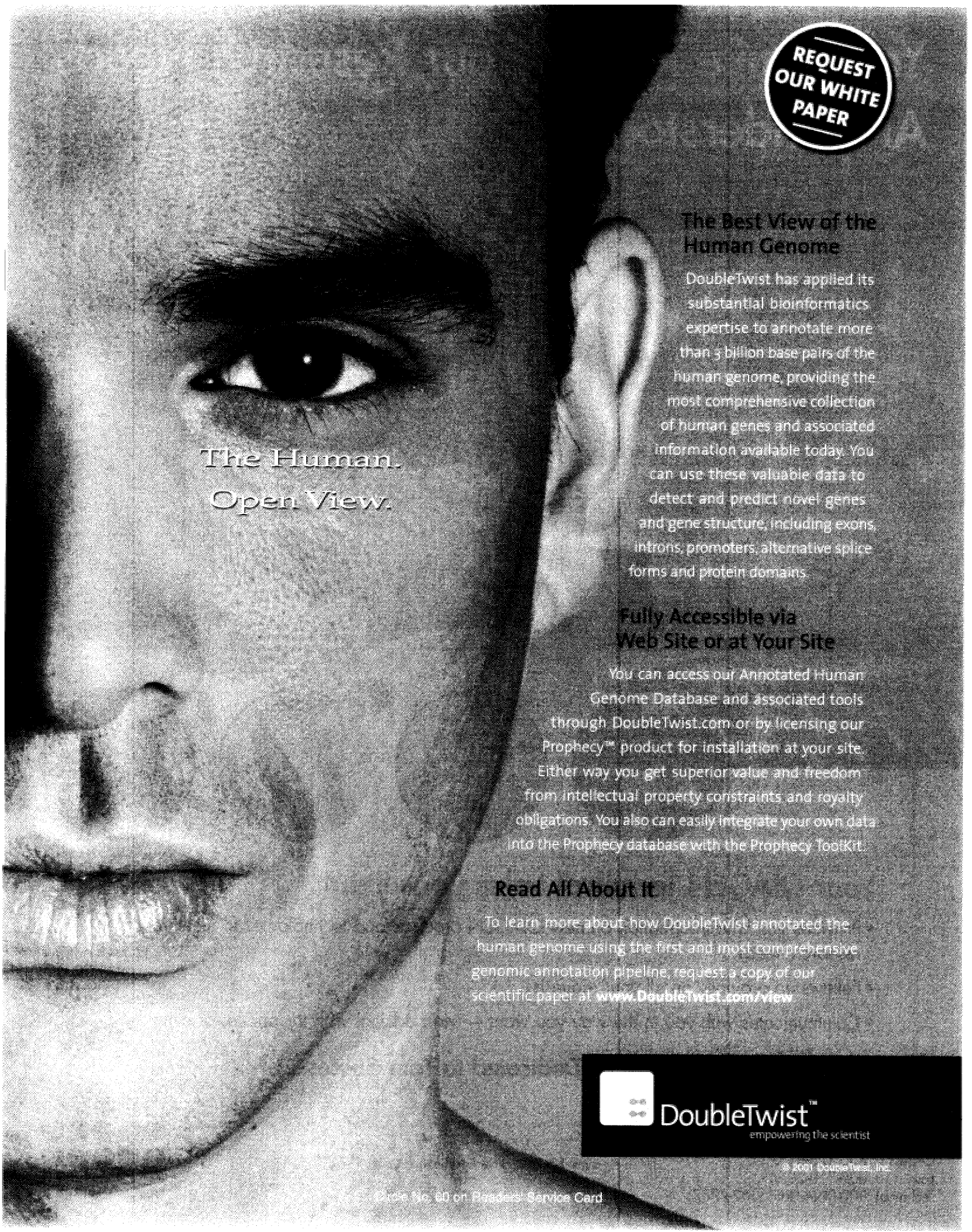
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CORRECTION: The URL for ATCC was incorrectly listed in the August 3, 2001 Drug Discovery special section. The correct URL for ATCC is www.atcc.org

Note: Readers can find out more about the companies and organizations listed by accessing their sites on the World Wide Web (WWW). If the listed organization does not have a site on the WWW or if it is under construction, we have substituted its main telephone number. Every effort has been made to ensure the accuracy of this information. The companies and organizations in this article were selected at random. Their inclusion in this article does not indicate endorsement by either AAAS or *Science* nor is it meant to imply that their products or services are superior to those of other companies.

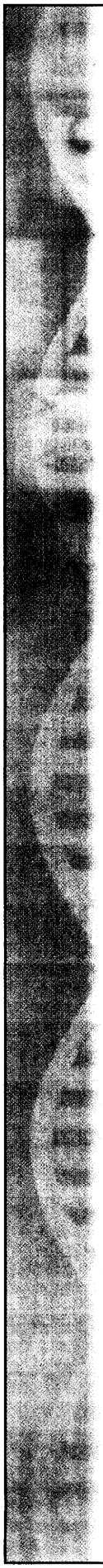
zations, including IBM, **Incogen**, **LabBook**, Millennium Pharmaceuticals, and Sun Microsystems. Working as a group, these organizations will develop common protocols for data exchange and knowledge management in the life sciences.

In the post genomic era, Zadeh said that biologists will need significant improvements in data integration, data management, and knowledge management. By settling on a common protocol that will standardize the way data are treated, all software packages and hardware tools will be able to communicate, much like the Internet. As a result, Zadeh said, "Computer providers will be able to concentrate on core business, instead of worrying about integration. With a common protocol, the integration will come on its own."

This effort to help scientists work together should reveal additional knowledge, even about data already available. Blevins said, "There's got to be some information buried in this. A standard vocabulary could increase our ability to mine different databases." With the ongoing efforts of I3C, improved mining will soon be possible.

With these computing standards, biomedical researchers can focus on the next great challenge: unraveling how a genome creates each specific protein, which eventually determines how a cell functions. In looking toward the future, David Lipman said, "Perhaps the area that could have the most impact on the role of computation in biology will have to do with analysis of signaling pathways and so on—a sort of 'meteorology' of the cell." He added: "If one could even get qualitative predictions based on computational analysis for understanding aspects of cellular physiology, then computation could have a similar role in biology to what it has in physics, but it's far too early to tell on that one." Wherever genomics and bioinformatics lead researchers, each major step in this seems as though they have reached the end of a journey, but then scientists always find new questions to ask and set new expectations.

Mike May is a freelance writer based in Clinton, Connecticut, U.S.A. Gary Heebner is president of Cell Associates, a scientific consulting firm in Chesterfield, Missouri, U.S.A.



BioValley

ALL IN THE VALLEY OF LIFE

Founded five years ago, the BioValley has already stimulated the growth of biotechnology firms and jobs in adjacent regions of France, Germany, and Switzerland. Over the next half decade its administrators intend to build on that success.

BY PETER GWYNNE

FEATURED ORGANIZATIONS:
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Endress + Hauser * GeneScan Europe AG * Löffler & Associates *
Louis Pasteur University * Novartis Pharma AG *
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Three cultures. Three scientific traditions. Two local languages plus English, the lingua franca of 21st century science. When a group of academics and industrialists from the segment of the upper Rhine valley where France, Germany, and Switzerland meet got together five years ago, they aimed to combine the unique strengths of the three countries in an organization that would stimulate the growth of life science in the trinational region. Since then the BioValley, as its founders called it, has begun to emerge as a significant commercial center for biotechnology and other forms of life science. "It has all the necessities to acquire, promote, fund, and set up companies," says Fritz Bühler, head of the European Center of Pharmaceutical Medicine at the University of Basel and an influential member of the BioValley organization from its beginning.

From the start, Bühler and other founders regarded the BioValley as a long-term project that would take at least a decade to become a significant player among the world's life science clusters. The project has just reached a key point in that development. Having operated the BioValley as an organization run by a trinational promotion team and backed by public money, the founders this month incorporated a new corporation, BioValley Company, Ltd., to promote the region's continued growth in life science. "After a period of public funding," says Beat Löffler, secretary general of the BioValley Promotion Team since 1996, "we are now heading toward a full private funding of the network in the next few years."

The move has been somewhat controversial. Even the principals involved in it can't fully predict its impact. What is clear, however, is that the basic BioValley concept has established a network that will play a significant role in global life science in coming years.

Surrounding the triangle created by the cities of Basel, Switzerland; Freiburg, Germany; and Strasbourg, France, the BioValley certainly has the fundamental characteristics demanded by any modern life science cluster. Global pharmaceutical, agrichemical, and

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

CONTINUED ⇛

chemical companies such as Aventis, CibaSC, Roche, Novartis, and Syngenta have headquarters in the region. Major universities in the three key cities and the French town of Mulhouse have strong life science departments and a steady output of qualified graduates. With 15,000 life scientists inside its bounds, according to the BioValley Science Guide recently published by Basel-based strategy and management consultancy COGIT AG, the BioValley has one of the world's highest densities of life science research. The region also boasts a profusion of venture capitalists, along with specialists in patent law, scientific communication, and related fields relevant to the commercialization of research.

The BioValley organization has already notched several successes. More than 120 new life science companies in research, service, and production have been founded in the region since January 1997. The region now offers a few hundred more jobs for life scientists than it did five years ago.

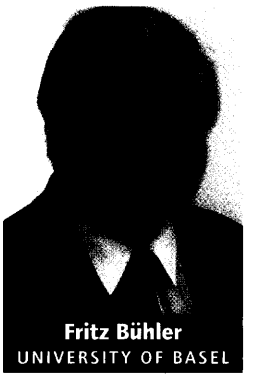
Just as important as the numbers is the awareness of the region's possibilities that the BioValley organization has created. Thus venture capitalists in the three member countries have taken steps to create a BioValley fund that will stimulate further start-ups and job creation. And representatives of large companies, small firms, and academic departments in the region have taken part in formal and informal talks that have produced several collaborative projects within and beyond the three national borders.

"The BioValley is a construct for bringing companies together to exchange views and technologies," says Walter Fischli, the founder, senior vice president, and head of drug discovery for Actelion, a chemistry based pharmaceutical company in Allschwil, Switzerland. "We have better interactions with local universities in the BioValley region than we did before," says Romeo Paioni, Novartis's head of scientific and external affairs for pharmaceutical development and a founding member of the BioValley association. "We have benefited from the BioValley's networking," adds Manfred Claassens, marketing director of GeneScan Europe AG, a molecular biology company in Freiburg. "It helps us to transfer our knowledge inside and outside the region."

LOCAL AWARENESS

Certainly promotion of the BioValley concept has improved local awareness of the region's international character. "In the past scientists were reluctant to interact across the border," says Bruno Dalle Carbonare, a pharmaceutical industry veteran who is head of technology transfer at the University of Basel and president of Basel's BioValley association. "The BioValley has helped to overcome that somewhat and make people aware of what is going on in other regions."

That awareness has eased the way for the location of significant life science business in the region. Thus when Novartis's agribusiness merged with Zeneca's agrichemicals division last year to form Syngenta International AG, the protagonists chose Basel as the new company's headquarters. "They certainly made an internal benchmark and decided to put it there," says Wolf Zinkl, a principal in COGIT. "The whole environment of the region helped to convince them." Similarly Novartis plans to locate a new drug discovery center that will employ a few hundred people in Basel. "We are confident that this is an area with high potential," says Paioni.



Fritz Bühler
UNIVERSITY OF BASEL

Life science firms beyond Europe have also noticed the BioValley. "Several Japanese companies have set up European subsidiaries in Alsace," says Bühler. Why? "The main advantage is that we are trinational," explains Sylvie Schott-Reverberi, an economist at the University of Strasbourg's European Management School who is manager of the Alsace BioValley. As she sees it, the goal of setting up a cooperative network among three countries is extremely fruitful. "The cross-border cooperation brings together three different cultural patterns, stimulating very creative solutions," she says. "Besides that we have many complementary strengths in academe, small enterprises, and big pharma in the three countries."

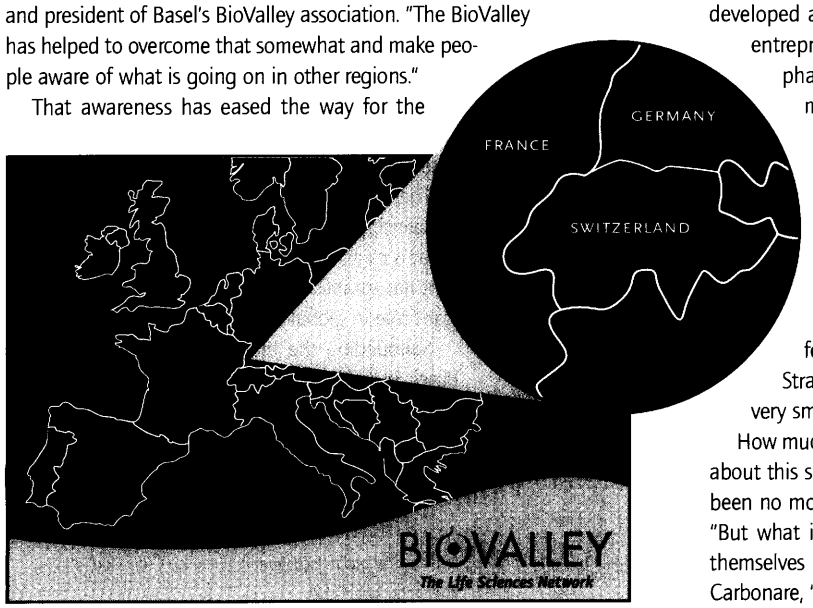
Walter Fischli
ACTELION

The region also boasts a strong supply of current and future life scientists. In addition to the 15,000 working life scientists, "We have 10,000 students in the life sciences in the BioValley," says Schott-Reverberi. "All the skills we need are available from the universities," adds Claassens. "Or course we have scientists from the U.S., India, and other parts of the world. But it is possible to get all the knowledge that we need locally. That was more difficult five years ago as we did not have the social network we have now."

An increasing proportion of the BioValley's scientists and students has developed a business mode of thinking. "The universities tend to be more entrepreneurial now," says Paioni. "Many scientists in the BioValley's pharmas switch from big corporations into smaller ones that are more flexible," adds Fischli.

Those entrepreneurial attitudes have led to the creation of new life science companies at an accelerating pace. For example, five new life science companies started operations in the past 20 months in the Alsace segment of the BioValley, which had just four start-ups between 1996 and 2000. "Five additional companies are in creation or will settle in Alsace," says Philippe Poindron, president of the French BioValley Association and professor of virology and cell biology at the Louis Pasteur University in Strasbourg. "With 7 to 10 jobs per firm these companies are usually very small, but they propose services or products of high added value."

How much has the concept and promotion of the BioValley helped to bring about this situation? What evidence there is "suggests that the BioValley has been no more successful than life science clusters anywhere else," says Zinkl. "But what is important is the psychological effect, in that people consider themselves part of the region we call BioValley." In other words, says Dalle Carbonare, "BioValley has become an effective brand."



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Europe's fast growing Life Sciences Network

BIOVALLEY
The Life Sciences Network

Dynamic Development

The Southern Upper Rhine Area – where France, Germany and Switzerland meet – has grown to become the BioValley of Europe, a rising star formed from a trinational cluster of organizations comprising a Life Sciences Network that is competing worldwide with the top Bio-Regions.

The BioValley was created in the last three years with trinational funds from INTERREG II, a programme of the European Union aimed at strengthening Europe's cross-border regions. Funding ends in September 2001.

Launch of the Trinational BioValley Company

To ensure the continuation of BioValley service activities and portfolio projects, a few entrepreneurs and some members of the BioValley Promotion team who were in charge of previous BioValley activities have now founded the BioValley Company Ltd. in Allschwil/Basel, Switzerland, and are planning the establishment of affiliates in France and Germany. They further intend to realise in a next step the participation of all members, friends and supporters of the BioValley in the BioValley Company.

Announcing BioValley's Alliance with Science Careers

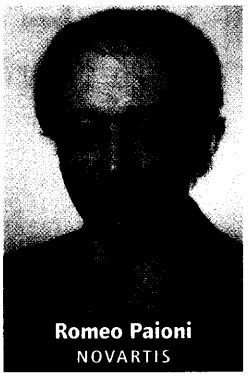
Science Careers and the BioValley Company are creating a cooperation programme to look after the needs of people in search of a professional niche. The BioValley enjoys dynamic growth and is looking forward to working with Science Careers in an effort to help Life Sciences people find the job opportunity they are looking for.

Job Vacancy for CEO

The BioValley Company plays a pivotal role in the dynamic impetus that is driving the trinational BioValley. This includes promotion, support for the planning of bioparks, and the foundation and acquisition of biotech companies jointly with the three national business promotion programmes and the BioValley Venture Fund System.

The BioValley Company is now inviting applications for the position of CEO. If you are familiar with the Life Sciences, can show excellent communication, management and marketing skills, and feel at home in English just as much as in French and German, this challenging and exciting position could be just what you have been looking for. For more information, see address below.

Please contact The BioValley Central Association
c/o Endress + Hauser Holding AG, Kägenstrasse 7, CH-4153 Reinach, Switzerland,
Tel +41 61 715 77 40, Fax +41 61 715 77 01, E-mail: central@bioValley.com



Romeo Paioni
NOVARTIS

HIGH HOPES

That branding represents just the start of the venture. Insiders emphasize that they believed the BioValley would develop slowly. "From the word go we were expecting that it would take 10 years or more to get it up and running," says Bühler, who is a general partner in the Bear Stearns Health Innovations Fund in addition to his positions in academe and the BioValley. However, their hopes for the concept remain high. "We hope that within 10 years of the beginning of the BioValley we will create another 400 new firms," says Georg Endress, founder of Basel based measurement and automation firm Endress + Hauser and the man widely regarded as the father of the BioValley. "We are also progressing on new jobs. In three to four years there will be 2,000 to 3,000 or more jobs here."

Reaching those goals won't be easy. To date the BioValley organization has relied in large part on public funds from local and national governments and the European Union. However, those funds will soon start to dwindle. So the BioValley organization faces a new challenge: weaning itself from government support and becoming a self-sustaining organization while at the same time continuing to promote the growth of life science companies and jobs. "Over the past five years we have managed to set up a culture of cooperation," says Bühler. "We are now in a tough part of the dose-response curve. The question is how to get past that."

Just this month some officials involved in the venture and some members of the BioValley Promotion Team came up with one answer. They formed the BioValley Company, Ltd., as a trinational private holding company based in Basel that will continue and expand the work of the original BioValley promotion team. "The idea is that the company will be able to act and react to create a new industry – biotechnology – among the region's big pharmas and universities," Bühler explains. "We're trying to dynamize the BioValley in terms of practical business among three nationalities in the hub of Europe."

Within days of creating the holding company the organization created subsidiaries in France and Germany that will further the concept in those countries. "We want the initiative to be sustainable and to maintain the international spirit that we have here," says Alsace BioValley's Schott-Reverberi. "There are two languages in the region and it's often quite difficult to get scientists and business people to work together. We also want existing companies in the region to collaborate more with each other."

The incorporation of the holding company has met an ambivalent reception. Dalle Carbonare of the University of Basel, for example, argues that no single company can or should monopolize business in the extended BioValley region. Endress agrees that policy making should involve as many people as possible. "It's important that the shareholders should be as widely distributed as possible so that everyone with a few francs can be involved in the company," he declares. "Therefore BioValley members will be able to invest in the company until the end of this year under the most favorable conditions." Endress notes that private capital has played a key role in the BioValley organization, especially in the beginning. "The initiative started as a purely private one," he recalls. "The BioValley trademark is owned by the BioValley Central Association in Basel. About two million euros [$1.8 million] of private money have been invested. That's at least as much as government financing."

Bruno Dalle Carbonare
UNIVERSITY OF BASEL

THE EARLY DAYS

Endress came into the BioValley picture about eight years ago during a conversation with Hans Briner, founder of the first regional association, Regio Basiliensis, and an old friend of Endress who had founded a group to advance science in the trinational Upper Rhine region. "We discussed what had to be done when the chemical and other industries that had sustained the region for more than 100 years declined," Endress recalls. "We realized that a lot of scientists would be free with a lot of knowledge but no jobs. We concluded that there was a lot of knowledge about biotechnology in the universities of Basel, Freiburg, Mulhouse, and Strasbourg."

The conversation sowed the seed of a trinational enterprise with the frontiers of the three countries more transparent than they had been in the past. Proponents focused on the American model of a biotechnology cluster. "Looking at the United States it was clear that we needed high-powered centers of excellence," says Bühler. "We also needed money." Endress remembers that American entrepreneur David Packard had explained to him that Silicon Valley had begun as a social network between universities, people, and companies, and that it had started to work when it had about 700 firms. So Endress, Briner, Bühler, Löffler, Schott-Reverberi, and others set out to create their own critical mass by bringing together local companies in the life science business and organizing plans to attract and create young firms.

The concept had a lucky break around that time when Basel based pharmas CIBA-Geigy and Sandoz merged to form a new pharmaceutical giant, Novartis. Several of the scientists laid off as a result of the merger decided to go into business for themselves. They created a handful of new companies with financial backing from the Novartis venture fund. About a quarter of the roughly 80 companies supported by the 100 million Swiss franc ($60 million) fund were located in the BioValley. "The merger gave a particular push to the development of the BioValley as an area where biotechnology companies would find a very comfortable area for interaction and networking," says Paioni of Novartis.

Endress and his colleagues first publicized the idea of a trinational BioValley in July 1996 at a conference in Colmar, France, based on a strategy paper written by Löffler and Axel Müller from Basel-based professional concept engineering company Löffler & Associates. In addition to representatives of pharmas, biotechnology companies, and academic departments of life science in the trinational region, they invited individuals from local patent offices, marketing firms, banks, and other organizations that could help to reach the goal of expanding commercial life science throughout the BioValley.

Manfred Claassens
GENESCAN EUROPE AG

"When we first came up with the strategy paper, many local representatives of life science organizations said that all necessary cross-border contacts existed and that a trinational net-

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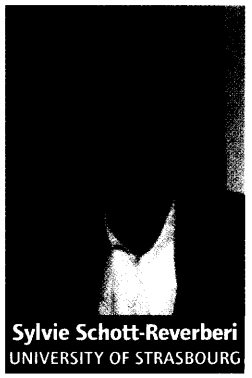
Sylvie Schott-Reverberi
UNIVERSITY OF STRASBOURG

work was unnecessary," recalls Löffler. The meeting proved the contrary. It resulted in creation of a BioValley secretariat based in Basel and local platforms in each of the three national regions of the valley. The platforms started to arrange forums to bring together parties interested in the life science business. "We decided to start off with round tables linking professionals, professors, bankers, and politicians," says Endress. "This started to work very quickly." The content of the round tables, though, surprised their originators. "We thought that they would discuss technical issues," Endress continues. "But in fact they looked at taxation rules and other issues that we thought would be of no interest."

FOCUS ON BUSINESS

That focus on business issues boded well for the progress of the BioValley. Indeed, says Endress, "The network quickly started to work and people started to get together as suppliers." Most of the initial links involved transactions within individual countries. Encouraging cross-border connections proved more difficult. "There were and are a lot of selfish nationalistic ideas," Endress admits. "But we know that we are going to succeed across frontiers." COGIT's Zinkl agrees. "People from the three national regions have been somewhat reluctant to go over the border," he says. "But the BioValley has helped somewhat to bridge that and to make people aware of what is going on in the other regions." One significant component of that effort: a BioValley newsletter whose circulation grew rapidly from a few hundred in late 1997, when it was introduced, to a few thousand.

Pharmas and other large life science companies in the BioValley both contribute to and gain from the BioValley. Last September, for example, Novartis set up the $50 million Novartis bioventure fund; its objectives include financing companies in the BioValley. In addition, company representatives sit on local committees with individuals from local universities, trade groups, and technology transfer organizations. "By being involved in this way we have access to the top government representatives and trade promotion organizations when we go to scientific meetings outside the BioValley," says Paioni. "If a Korean, Japanese, or American delegation comes to Basel, our local trade organization asks us to show the delegation around. A lot of links are made as a result of the BioValley."

The new BioValley company plans to pressure local authorities in the region to build fresh facilities for life science. "Bioparks already exist in all three countries and new ones will be created in Strasbourg, Freiburg, and Basel," says Bühler. "If they are planned well I believe the local governments will provide more money to build them." New parks of this type will inevitably attract local start-up companies and firms relocating from beyond the BioValley. That will increase the range of potential business partners available to companies already in the valley.

BREADTH OF EXPERTISE

BioValley companies have also benefited from academic departments within the region. "Human genome sequencing has pushed us to a new dimension in understanding the causal origin of diseases via many thousands of new targets," says Paioni. "We need molecular biologists, genetic engineers, and scientists in transgenic technologies. We also need the whole spectrum of specialists: chemists, pharmacologists, toxicologists, bioinformatics experts, technicians, clinicians, and statisticians, along with MBAs and marketing people for the business areas. In the BioValley you find all this expertise." Claassens of GeneScan agrees. "The BioValley is very helpful to us because it's well known," he says. "All the professionals we need are available from the universities in the region."


Georg Endress
ENDRESS + HAUSER

Figures collected by Dalle Carbonare and Zinkl under COGIT's aegis illustrate the region's wealth of scientific talent. Over 400 research groups in over 160 academic and/or public institutions in the BioValley employ 5,000 scientists with master's or doctoral degrees. More than 75 percent of the 1,000 chemists in the area are actively involved in research with direct application to life science. The region boasts more than 500 specialists in genetics and genomics, about 250 neuroscientists, and approximately 200 specialists in cell and developmental biology. Surprisingly, the BioValley also houses 700 physicists who carry out research related to the life sciences. "The formation of several start-up companies developing micro- and nanosystems for life science applications proves that new and innovative technologies linked with physics find a very favorable scientific and business environment in BioValley," the COGIT report notes.

The efforts of the BioValley promotion team have brought the region to the attention of scientists outside its borders. "People are attracted to our company from far beyond the region," says Actelion's Fischli. "We get applications from all over Europe and the United States and have already engaged people from more than a dozen nations." BioValley authorities encourage such transfers. "We think that permanent exchanges with similar biotech regions will improve the quality of our region," says Poindron of the French BioValley Association.

The BioValley has plenty to offer to individual scientists who want to relocate there. The concentration of life science companies means plenty of extra employment opportunities in case the initial job doesn't work out. In addition, the region has set up a strong support system for entrepreneurial scientists. "It is perfectly possible to create a company in the BioValley," says Poindron. "Many public and private forms of support can be found for this purpose."

Beyond that the region offers individuals a satisfying lifestyle. "We have a beautiful landscape and the area has an open-minded atmosphere," says GeneScan's Claassens. "You are very close to interesting points in Europe such as Zurich, Milan, Paris, and Frankfurt, and you're not far from London." Beyond that, says Paioni, "We have a good social network with a highly developed infrastructure, good public and private multilingual schools, and even a Japanese school. Basel, Strasbourg, and Freiburg all offer a strong cultural life. And isn't the BioValley located in a region that is a famous gastronomic center with excellent wines and food specialties?"


Wolf Zinkl
COGIT

What prospects do scientists from beyond the BioValley have for jobs there? Even though they can find most of their employees locally, organizations in the BioValley are eager to recruit outside talent. Individuals who make it there will be able to take advantage of a unique international venture. Says Fischli of Actelion: "I think that the BioValley, in whatever form, is an important initiative for promoting and bringing together people from different companies and countries." ■

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Closing date: 15 October 2001. Applications including the CV, certificates, publication list should be sent to: **Technische Universitaet Muenchen, Fakultaet fuer Informatik, LS VI – Robotics and Embedded Systems, z.H. R. te Vehne, Orleansstrasse 34, 81667 Muenchen, Germany, or by E-mail to Vehne@in.tum.de**

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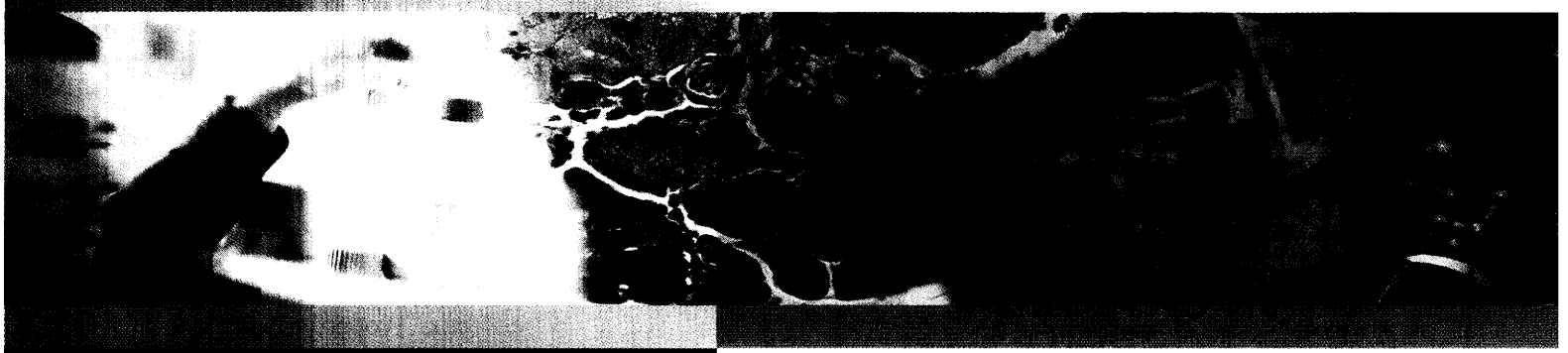

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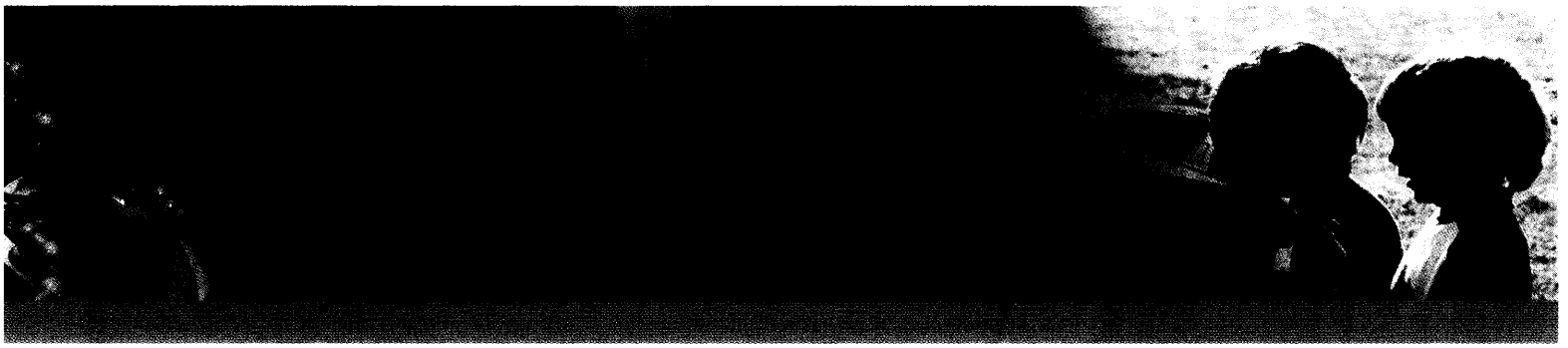


REPRODUCTIVE HEALTH

The Serono Reproductive Biology Institute in Boston, USA is a center of expertise for research into the molecule mechanisms of reproductive health. We are further strengthening our biology base and have open post-doctoral positions in disciplines relating to fertility and reproductive cancers.

POST-DOCTORAL: REPRODUCTIVE BIOLOGY– U-0005

Post-doctoral positions available to work in the areas of male and female reproductive biology. Based in Boston, USA.

POST-DOCTORAL: CANCER BIOLOGY– U-0004

A cell biologist with extensive experience in molecular and cellular processes underlying cell transformation, metastasis and tumor formation. Based in Boston, USA.

NEUROBIOLOGY

Our neurobiology project teams currently focus on mechanisms implicated in Multiple Sclerosis and Alzheimer's disease. We are expanding our biology team to address the causes of neurodegenerative diseases at the molecular and cellular level. We seek talented and highly motivated scientists in the following areas:

SENIOR NEUROBIOLOGIST– S-0001

The qualified candidate will lead a group of scientists to identify novel cellular pathways to neurodegenerative disease. Based in Geneva, Switzerland.

IN VIVO NEUROPHARMACOLOGIST– I-0003

We seek a scientist to lead a group focussing on neuropharmacological aspects of agents regulating inflammation, autoimmunity, metabolism, obesity and reproductive function. Based in Ivrea, Italy.

NEUROBIOLOGIST– S-00022

A scientist position is available to join a team developing cell-based assays for remyelination and neuronal survival. Based in Geneva, Switzerland.

METABOLIC ENDOCRINOLOGY

Diseases of intermediary metabolism are frequently linked to infertility and we currently have open positions in this key area.

GROUP LEADER: METABOLIC ENDOCRINOLOGY– U-0001

Expertise in the endocrine factors that underlie metabolic diseases including obesity, insulin insensitivity and their association with infertility is essential. Based in Boston, USA

IN VIVO PHARMACOLOGIST– I-0002

You will have broad experience in metabolic endocrinology and will participate within multi-disciplinary teams studying novel agents regulating obesity, insulin action and fertility. Based in Ivrea, Italy.

IMMUNOLOGY

Our immunology projects focus is the molecular and cellular basis for auto-immune diseases and neuroinflammatory diseases such as multiple sclerosis, rheumatoid arthritis and Crohn's disease.

CELLULAR IMMUNOLOGIST– S-0004

Scientist with broad understanding of molecular and cellular mechanisms underlying immune and auto-immune processes and how these underlie a range of disease states. Based in Geneva, Switzerland.

IN VIVO PHARMACOLOGIST– I-0004

Scientist with background in animal models of autoimmune diseases to lead a group focusing on pharmacodynamic research. The group assumes responsibility for the development of new models, including implementation of non-invasive technologies. Based in Ivrea, Italy.

Serono ranks amongst the world's top three biotechnology companies with recombinant drugs in the areas of reproductive health, growth, wasting and multiple sclerosis. A rich development pipeline also includes a number of innovative new products for diseases in neurology, immunology and oncology. With sales in excess of $1.2 billion in 2000, and an annual R&D investment exceeding $300 million for 2001, Serono supports fully integrated drug discovery located at three state-of-the-art research centers in Switzerland, Italy and USA.
In addition to a challenging career in high-technology and a creative working environment, Serono offers continued training and personal development along with an attractive remuneration and benefits package.

For a complete information on the above positions, please visit our internet site **www.serono.com**, "Discovery" section.

If you are interested in one of the above positions, your complete application with a minimum of three references (mentioning the job code) should be forwarded to the attention of the Human Resources Manager of the respective sites.

Geneva: Michèle Cassard (spri.jobs@serono.com)
Boston: Nicolas Ristic (please apply through www.seronousa.com)
Ivrea: Roberto Dignani (rbm@lcg-bioscience.com)

Serono Reproductive Biology Institute, Inc.
100 Longwater Circle, Norwell (Boston), MA 02061, USA
Tel: +01 781 982-9000 Fax: +01 781 871-6754

RBM,Istituto di Ricerche Biomediche
Via Ribes 1, 10010 Colleretto Giacosa (Ivrea), ITALY
Tel: +39 0125 222 111 Fax: +39 0125 222 599

It's good to be part of a team

NOVARTIS

DDC Information and Automation Technology Unit Head

Switzerland / US

We are seeking an IT leader with 5 or more years experience in application development and/or lab automation. Educational background in informatics, computer science or computer engineering is preferred. Previous IT and/or automation related job experience in drug discovery, high throughput screening or similar areas within the pharmaceutical or biotech industry is a clear asset and advantage.

You will:

- Lead the Information & Automation Technology Unit within Novartis's new Drug Discovery Center (DDC) and provide data management, data analysis, and engineering solutions to support scientific and process automation goals.
- Ensure global coordination of the activities of the IAT Unit's automation systems. Will require significant travel between Europe and the US.
- Ensure that the technological skills of team members within IAT remain cutting edge by encouraging the application of innovative IT and automation solutions in all DDC business areas.

We're interested in hearing from people with a passion for science and a commitment to life. Together we can build the future. Please send your resume to carrie_a.gibbs@pharma.novartis.com and include reference SIA-N01043 in your email subject line.

For more information on this and other opportunities within the DDC, please visit our careers website.

www.novartis.com

Science @ sciencecareers.org

& BIOVALLEY

The Life Sciences Network

European Recruitment Solutions

ScienceCareers.org and the BioValley Company Ltd. are working together to create a regional recruiting network, and to provide added value to companies and universities in the tri-country BioValley region which encompasses parts of France, Germany, and Switzerland.

If you wish to reach scientists in Europe, *Science* Careers can help.

For more information, please contact Deborah Cummings, Tracy Holmes, or Richard Walters.

Telephone ..... +44 (0) 1223 326 500
Fax ..... +44 (0) 1223 326 532
E-mail ..... european_ads@science-int.co.uk

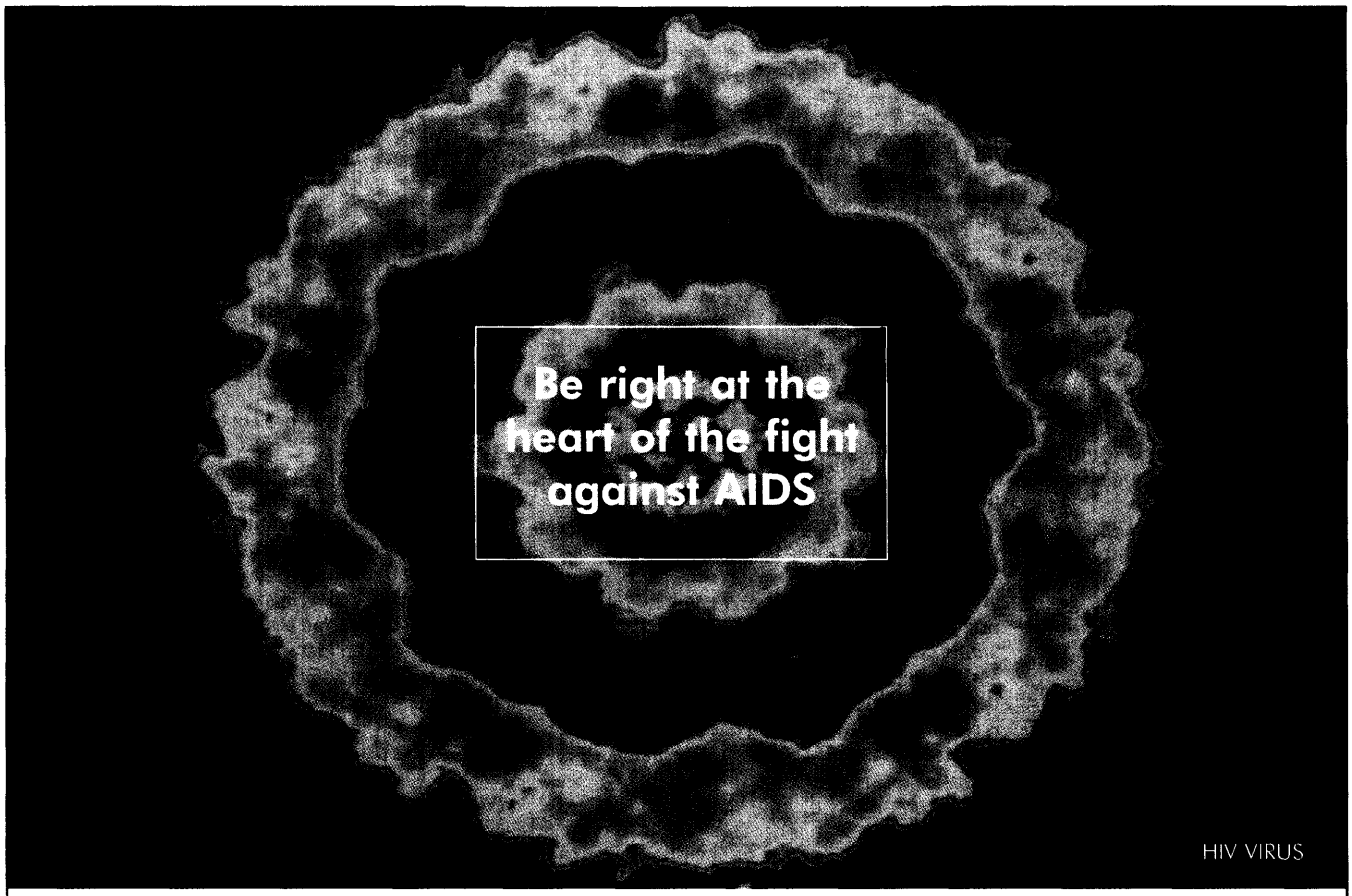
Science
www.sciencecareers.org

JUNIOR GROUP LEADER POSITIONS

The **Department of Cell Biology, University of Geneva, Switzerland** invites applications for two junior group leader positions from individuals with a strong research program in cell biology. One position is available immediately for three years with the possibility of tenure at the assistant professor/"MER" level. The second position is for a scientist with a career development award, such as the "Professeur boursier" from the Swiss National Science Foundation (2002 call for proposals, starting in 2003). Successful applicants are expected to apply for research grants and to participate in the teaching of the department.

Present group leaders are: Angela Krämer: Nuclear pre-mRNA splicing; Jean-Claude Martinou: Molecular mechanisms of apoptosis; Didier Picard: Signal transduction by steroid receptors, molecular chaperones; Georges Spohr: The role of myogenic factors in muscle development in Xenopus; Katharina Strub: Sorting of proteins to the endoplasmic reticulum; Jean Gruenberg (Joint appointment): Regulation of membrane dynamics. Detailed information about research in the department can be found on the web site: http://www.unige.ch/sciences/biologie/bicel/

Send a CV, a short statement of research interests, and the names of three references to **Prof. Angela Krämer, Département de Biologie Cellulaire, Université de Genève, 30, quai Ernest-Ansermet, CH-1211 Geneva 4, Switzerland; E-mail: angela.kraemer @cellbio.unige.ch**



HIV VIRUS

SANDWICH, KENT

Concentration. You don't achieve results without it. That's why we've centred all our European research into new treatments for AIDS within one £multi-million state-of-the-art research facility, and why we're bringing together a talented team of HIV virology specialists keen to work at the core of developments in this field.

It's a focus that will make your work more productive and more satisfying. Each of these new roles has the support of unrivalled resources in the shape of a brand new, purpose-built BSL3 containment laboratory complete with the latest automation technology.

HIV Virology Scientist (CL3)

You'll supervise the work of a small team of virologists developing assays and evaluating compounds from our ongoing programmes. It's a hands-on job, which will give you many opportunities to pass on your extensive experience, and apply it to the discovery of new lines of attack against the virus. You'll be responsible for the continuity of innovative approaches and production of reliable data, and for presenting your work to the project teams.

To bring us a thorough understanding of the most current techniques and technologies in the area, you'll need at least five years' post-graduate experience in an HIV research environment, ideally including two within industry, in addition to a degree in a biological science and a track record of innovative research in the field. Just as importantly though, you'll have the expertise and enthusiasm to mentor and inspire your team, plus the ability to collaborate with colleagues at all levels.
Ref: T275/2001/S.

Cellular Virology Assistants (CL3)

Working within discovery teams searching for new therapies against AIDS, you'll focus on profiling new candidate treatments and validating innovative approaches. Our investments in the latest automation technology are there to help you increase your productivity and take the next generation of treatments to the clinic. For this, you should be well-versed in HIV assay theory and equipped with excellent skills in tissue culture assays.

At least a year's experience at a class 3 containment laboratory is desirable, ideally gained in an industrial environment, together with a BSc in a biological science.
Ref: T073/2000/S.

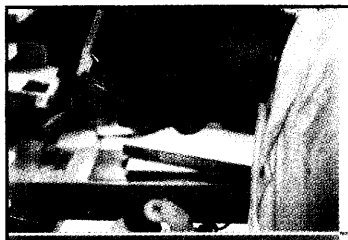
As well as highly competitive rewards, you'll enjoy a free-thinking, pioneering culture and the chance to work alongside world authorities in their fields at our centre of excellence in Kent. Naturally we offer relocation assistance to this stunning part of the UK. Not only that, you'll be encouraged to develop within a company whose research capability is the best in the pharmaceutical industry. This year we'll invest some $5 billion in R&D overall.

Get closer to a breakthrough by getting right to the heart of the action. Please write with your CV, quoting the appropriate reference to Helen Clark, Resourcing Adviser, Pfizer Global Research and Development (IPC 077), Ramsgate Road, Sandwich, Kent CT13 9NJ.
Closing date: 19th October 2001.
www.pfizer.co.uk/recruit

Pfizer Global Research and Development

AWARDED TO PFIZER LIMITED

THE QUEEN'S AWARD FOR ENTERPRISE 2000/2001



It's good to be part of a team

NOVARTIS

Lab Head Biochemistry

Switzerland / US

We are seeking a PhD Scientist for our Global Screening Operations unit in the new Drug Discovery Center (DDC). Our ideal candidate will have experience in acquisition and application of High Throughput Screening Technologies to provide biologically active lead compounds for disease oriented research.

The applicant should have a proven track record in the development of enzyme and binding assays using various readout technologies (ELISA, FRET, fluorescence polarization) as well as in cell based assays (Reporter gene, secretion). An educational background in Biochemistry and/or Cell Biology is required and two years of post doc experience preferably in Pharma research is desirable.

You will:

- Participate in development, tool production, and running of new assays
- Lead and manage a team of research technicians
- Collaborate with other project teams and working groups
- Contribute to innovation of technologies and processes
- Generate program ideas and have possibility to initiate research programs.

We're interested in hearing from people with a passion for science and a commitment to life. Together we can build the future. Please send your resume to dieter.geyl@pharma.novartis.com and include reference SLHB -N01071 in your email subject line. For more details about this and other opportunities please visit our careers website.

www.novartis.com

Inserm

French Institute of Health and Medical Research

Inserm is the French institute devoted to biomedical research and health. 10,000 persons work in 300 Inserm laboratories. Inserm has a budget over 450 million euros. Inserm collaborates with 93 countries and 260 industrial partners.

With the aim of giving a strong support to young researchers and of strengthening scientific dynamics of basic biomedical research, clinical research and public health,

Inserm launches the Avenir program: the call for proposals concerns post-doctoral scientists and young researchers with a permanent position.

The program will allow awardees to obtain:

- a financial support of 60,000 euros per year for a 3 year period
- laboratory space of approximately 50 m2
- access to core technological facilities
- to host a foreign post-doctoral fellow

The Avenir program concerns young researchers with a permanent position or French and foreign post-doctoral fellows who have a creative research project.

Inserm intends to select 45 projects.

For complete information consult the web site of Inserm http://www.inserm.fr (" actualités ") or call 33 1 44 23 67 01 or send a mail to postel-vinay@tolbiac.inserm.fr

It's good to be part of a team

NOVARTIS

Lab Head Cell Biology

Switzerland / US

We are looking for an experienced Lab Head in Cell Biology and/or Molecular Biology for our Global Screening Operations Unit in the Drug Discovery Center (DDC).

Our ideal candidate possesses strong skills in cell cultivation (lab and bulk scale), cloning and stable/transient transfection as well as in designing constructs and tools. Experience in planning and implementing automated systems for cell cultivation is desired.

Applicants should have a PhD in lifesciences and preferably two years of post doc experience in Pharma research.

You will:

- Participate in development, tool production, and running of new assays
- Lead and manage a team of research technicians
- Collaborate with other project teams and working groups
- Contribute to innovation of technologies and processes
- Generate program ideas and have possibility to initiate research programs.

We're interested in hearing from people with a passion for science and a commitment to life. Together we can build the future. Please send your resume to dieter.geyl@pharma.novartis.com and include reference SLHB -N01070 in your email subject line. For more details about this and other opportunities please visit our careers website.

www.novartis.com

UNIVERSITY OF BERGEN

Postdoctoral Research Fellow in Gas Processing Technology

Postdoctoral Research Fellow in Gas Processing Technology, University of Bergen, Norway. Applicants must have completed a doctorate (equivalent to a Norwegian Ph.D.) in chemical or mechanical engineering or a related subject. The position involves research and teaching. Emphasis in research is on application of the fundamental sciences for gas processing technology.

The submission should include an outline research proposal within the fields of cleaning, handling or chemical conversion of natural gas.

More information at http://www.uib.no/stilling or from Professor Alex Hoffmann, e-mail: alex.hoffmann@fi.uib.no, tel.: (+47) 55582876.

Submit application in three copies, sorted into three bundles, to the University of Bergen, The Process Technology Programme, Allégt. 55, N-5007 Bergen, Norway, **before 31 December 2001.**

CICERO

French Republic

The State and Ile-de-France Paris Region

launch an appeal for proposals for

5 new "Blaise Pascal" International Research Chairs

Each Chair will enable a **top foreign scientist** in exact or applied sciences, earth and environmental sciences, new technologies and human or social sciences, to be hosted for 12 months full time, possibly spread over 2 years, in one or more further education or research establishments in Paris/ Ile-de-France.

- Applications should propose a **scientific project** and specify requirements ; they have to **be compiled jointly with the hosting establishment**.
- The amount of finance dedicated to each project is **1.3 MF -198 183 Euros** (salaries, social security charges, management costs, taxes and support expenses, etc. included).
- Recipients will be expected to give a series of ten lectures, the last of which should be broader in scope.
- A multi-disciplinary panel, drawn from the Institut de France, will select applicants according to the scientific interest of the project and the quality of the application.

Applications submitted: before 31 december 2001

Application forms available from the following address:

Fondation de l'Ecole Normale Supérieure
Chaires Internationales de Recherche "Blaise Pascal"
45, rue d'Ulm, -75230 Paris cedex 05

Information :
Wladimir Mercouroff - Tel.: 33 (0) 1 44 32 3185 / 3581 / 3849,
Fax 33 (0) 1 44 32 3183, E-mail: fondation@ens.fr

Postdoctoral Positions
National Heart, Lung, and Blood Institute
National Institutes of Health

Postdoctoral positions are available for a newly established Laboratory of Developmental Biology at the National Heart, Lung, and Blood Institute. The postdoctoral fellows will be directed by Dr. Cecilia Lo, Chief of the Laboratory of Developmental Biology, whose research focus is on the role of neural crest and proepicardial cells in the regulation of cardiovascular development and function. Positions are available for work in three major projects: biochemistry, and cell and molecular biology of cell signaling pathways involved in cardiac neural crest and proepicardial cell motility and cell proliferation, gap junction modulation of cardiovascular development and cardiac function, and genes and genetic pathways modulating vertebrate cardiovascular development. For these projects, we seek individuals with a Ph.D. or M.D., and with knowledge in recombinant protein biochemistry, genomics, or proteomics, experience in confocal and videomicroscopy and motion analysis, experience using embryonic stem cell method for gene targeting, and/or expertise in electrophysiology and/or cardiac physiology.

These positions are open immediately. The appointment is for three years, possibly renewable if mutually agreed upon. The salary is highly competitive and will depend on qualifications of the candidate. Applications should be received by **December 20, 2001**.

To apply, send a letter of interest, curriculum vitae, and bibliography and arrange for three letters of reference. Communication by e-mail, including attached files, is welcome.

Cecilia Lo, Chief, Laboratory of Developmental Biology,
Intramural Research
National Heart, Lung, and Blood Institute
National Institutes of Health, Bldg. 50, Room 4537
Bethesda, Maryland 20892-8019 USA
E-mail: loc@nih.gov

NIH is an Equal Opportunity Employer

TARGETED GENETICS

"We discover, develop and deliver molecular medicines to cure disease."

Targeted Genetics Corporation is a rapidly growing Seattle-based biotechnology company developing gene therapy products for the treatment of acquired and inherited diseases. We are adding motivated professionals to capitalize on our leadership position in the field:

Staff Scientist

Manage and optimize producer cell line generation for viral gene therapy products. Hands-on position requiring expertise in cell culture, molecular cell biology, screening assays, and cell line characterization cGMP environment. Background in virology and/or media development a plus. Requires a Ph.D. in a biological field. Postdoctoral or industry experience preferred.

Postdoctoral Scientist

Developing production systems for viral gene therapy products, focusing on cell line/molecular engineering with the ultimate goal of being suitable for scaleable manufacturing. Requires expertise in cell culture and molecular/cell biology, and strong analytical skills. A background in virology also desired. An excellent opportunity to gain experience in the biotechnology industry.

For more information on other opportunities at Targeted Genetics Corporation, visit our website at **www.targetedgenetics.com.** For consideration, please send your resume to:

Targeted Genetics
1100 Olive Way, Suite 100
Seattle, WA 98101
Fax: 206-521-4872
email: careers@targen.com
EOE

The International Balzan Foundation
is pleased to announce the winners of the

Balzan Prizes 2001

for Cognitive Neurosciences
Prof. **Jean-Pierre Changeux**, France
for Climatology
Prof. **Claude Lorius**, France
for Literary History and Criticism (post 1500)
Prof. **Marc Fumaroli**, France
for History of Architecture (including town planning and landscape design)
Prof. **James Sloss Ackerman**, USA

Balzan commitment to emerging talent
Each Balzan Prize is worth 1,000,000 Swiss francs (£405,000 US $ 567,000). In awarding the prizes, the Foundation asks prize-winners to set aside half the amount to support research projects and similar work preferably involving young scientists or scholars.

The Award-giving Ceremony of the Balzan Prizes 2001 will take place in Bern, Friday November 9th, in the Parliament of the Swiss Confederation.

Next Balzan Awards

Balzan Prizes 2002

each worth 1,000,000 Swiss francs, of which half to be earmarked to research projects, will be awarded in the fields of:

- ***Developmental Biology***
- ***Geology***
- ***Sociology***
- ***History of the Humanities***

International Balzan Meetings – Advance Notice

Meeting the Challenges of the Future:
A Discussion between *"The Two Cultures"*

A Symposium organised by the International Balzan Foundation and held at The Royal Society, London

May 13th-14th 2002

The International Balzan Foundation is dedicated to recognising and rewarding outstanding individual achievement - regardless of nationality, race or creed - in science, humanities, culture and humanitarian causes through a programme of prestigious annual prizes totalling 4 million Swiss Francs (£1.6 million, US $ 2.2 million). Nominations are submitted by universities and learned societies. With offices in Milan and Zürich, the Foundation is advised on its awards by a committee of 18-20 distinguished European scientists and academics.

Over the last forty years, the Balzan Foundation has awarded over 33 million Swiss francs (£13 million, US $ 19 million) to 82 international scientists for their contributions in such varied fields as anthropology, art history, music, geophysics, social science, epidemiology, philosophy and history. Uniquely among major international foundations, the Balzan Foundation chooses different subjects each year within the sciences and the humanities. This enables it to encourage emerging new research areas and to support important fields of study possibly overlooked by other major international Prizes.

For further information:
email: balzan@balzan.it · www. balzan.it

High-Level Scientific

The European Commission's High-Level Scientific Conferences promote scientific and technological excellence by creating opportunities for scientific exchange by:

- **allowing senior researchers to impart their experience to the younger generation;**
- **creating a framework for the networking of EU researchers with scientists outside the Member and Associated States.**

These conferences are supported under the Human Potential Programme (IHP) with a budget of 35,5 Million Euro for events in any scientific field. Some 100,000 researchers are expected to benefit from IHP's support of the following types of events:

Types of conferences

EuroConferences
High-level meetings on a focused theme at the cutting edge of research; Support for events lasting up to 7 days; Up to 150 participants.

Euro Summer Schools
Advanced training for young researchers on a defined syllabus; multidisciplinarity is particularly encouraged; Support for 30-day events at any time of year; Up to 150 participants.

EuroLabCourses
Advanced training in practical techniques in a laboratory or field environment; Support for events up to 30 days; Up to 50 participants, including lecturers; industry participation is particularly encouraged.

EuroWorkshops
Meetings to analyse the most recent research results and plan further developments; Support for meetings lasting up to 30 days; Up to 50 participants active in scientific fields of extreme dynamism.

Large Conferences
Funding is available to allow young researchers to attend large international events (more than 150 participants).

PhD EuroConferences
Support exclusively for young researchers to organise and participate in their own conference; Up to 150 participants at events of up to 7 days.

Eurotron Conferences
Events similar to one of the types above but held over the Internet. Extended series of events, and projects involving both physical and virtual events, are encouraged.

Who can participate?

To apply for funding for an event
Researchers wishing to organise their own "High-Level Scientific Conference" should apply to the European Commission for a Guide for Proposers and application form. Both are available from the Web site:

www.cordis.lu/improving

To apply to participate in a funded event
Interested researchers should make direct contact with the event organisers for help with travel, subsistence or participation fees for a particular event. An on-line database with the detailed list of conferences and the organisers contact details is available on our Web site. Please see under **Selected Conferences**.

European Commission

Community Research

Conferences

What does the funding cover?

Participation of young researchers (up to the age of 35 at the time of the event - allowance is made for childcare, compulsory military or civil service) who are nationals of, and active inside, a Member or Associated State (up to 100%);
Participation of researchers, of any age, who are nationals of, but active outside, Member and Associated States (up to 100%);
Participation of invited keynote speakers and organisers of any nationality (up to 50%);
Expenses related to the organisation of events.

Deadline for organisers

1 February 2002

Proposals may be submitted at any time. Events can start no sooner than 6 months after the relevant deadline.

Areas covered

Conferences can be on any scientific topic:

Physics
Chemistry
Life Sciences
Engineering Sciences
Environment & Geosciences
Economic, Social&Human Sciences
Mathematics & Information Sciences

Frequently asked questions

Is 100% funding possible?
Normally this cannot be achieved. Therefore, proposers are advised to have at least one other source of funding to cover expenses that are not covered by the contract with the Commission.

How much money is awarded?
Normally, up to 50,000€ for each event. There is a limit of 280,000€ per project. Exceptions may be made in well-justified cases.

Which fields of research are eligible?
A proposal may be in any field of scientific research, provided there is a strong training element.

Where should events take place?
The events proposed, and the legal entity responsible for organising them, must be located in a Member or Associated State*.
*www.cordis.lu/fp5/src/3rdcountries.htm

Is there any flexibility in the guidelines?
Allowances can be made in well-justified cases.

How are proposals evaluated?
Proposals that meet the eligibility criteria are evaluated by a multidisciplinary panel of independent experts. For full details, please refer to the Guide for Proposers available on the Web site.

What success rate can we expect?
The predicted selection rate is at least a third of conference proposals.

EC contact

Dr Rudolf Meijer
European Commission, Research DG
Human Potential Programme
High-Level Scientific Conferences
SDME 1/69, Rue de la Loi 200
B-1049 Brussels
Belgium
Fax +32 2 296 3308
E-mail: improving@cec.eu.int
Helpdesk: + 32 2 299 2164

All information on 'High-Level Scientific Conferences' at

www.cordis.lu/improving

IMPROVING HUMAN RESEARCH POTENTIAL AND THE SOCIO-ECONOMIC KNOWLEDGE BASE

Cornell University is an affirmative action/equal opportunity employer.

CORNELL

Plant Genomics

at Cornell University

As part of a university-wide genomics initiative, Cornell University is seeking applications for 7 positions in plant genomics. Successful candidates will be located in various departments/units on the Ithaca campus but will be part of the larger Cornell Genomics Initiative. They will have access to multiple genomics resources and are encouraged to form collaborations throughout campus. For more information on the Cornell Genomics Initiative see:

www.genomics.cornell.edu

Assistant Professor Positions

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

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

Plant Molecular Biology: Applications are sought for a molecular biologist to work on molecular and physiological aspects of plant senescence with potential long-term applications to plants important in horticulture. Applications from candidates working on model systems (e.g., Arabidopsis) are welcomed. An interest in horticulture is desirable. The successful candidate will be based in the Department of Horticulture and is expected to teach one postharvest course at the undergraduate level and to participate in interdisciplinary graduate education.

Applicants for these three positions should send a cover letter stating the position(s) for which they wish to be considered, a curriculum vitae, a statement of research interests, and the names of at least three references to: Plant Genomics Search Committee, 520 Bradfield Hall, Cornell University, Ithaca, NY 14853-1901, attn: Laurie Hanley (ljh4@cornell.edu; phone 607-255-1655; fax 607-255-6683). Review of applications will begin November 15 and will continue until the positions are filled.

Plant Molecular Biologist/Biochemist at USDA-ARS/Cornell

The USDA-ARS Center for Health-Based Crop Genomics, which is part of the USDA-ARS Plant, Soil, and Nutrition Research Unit on the Cornell University campus in Ithaca, New York, is soliciting applications for outstanding candidates in the areas of plant molecular biology and/or plant biochemistry. The research associated with this position will focus on plant genomic approaches to study the accumulation and/or synthesis of inorganic and organic constituents of plant foods that impact human health and/or nutrition either through diet or as pharmaceuticals/nutraceuticals. Research may also deal with the genetic/molecular control of toxic mineral accumulation in plant foods. The successful candidate will be part of the Cornell Genomics Initiative; as such, he/she will participate as an adjunct faculty member in an appropriate Cornell University department. The salary range for this position is $51,927 to $80,279 per annum. Candidates must have U.S. citizenship and at least a doctorate degree in plant molecular biology or related disciplines such as plant biochemistry, plant physiology, or molecular genetics.

To obtain additional information and application forms, visit our web site at www.afm.ars.usda.gov/divisions/hrd/hrdhomepage/empopp.htm or call Sharon Maio at 607-255-5487. Applications in response to this ad must include the Vacancy Announcement Number ARS-X1E-1525 and be postmarked by December 3, 2001. Review of applications will begin November 15 and will continue until the position is filled.

ARS is an equal opportunity employer.
Women and minorities are encouraged to apply.

Plant Molecular Biologists at the Boyce Thompson Institute for Plant Research

The Boyce Thompson Institute (BTI) for Plant Research, a not-for-profit organization at Cornell University, invites applications for three faculty positions, at any level, although preference will be given to junior applicants. We are seeking scientists who use molecular, biochemical, genetic, cell biological, genomic, and/or proteomic approaches to elucidate mechanisms underlying plant-microbe/insect interactions, chemical/molecular ecology, or plant development. Research emphases of interest include, but are not limited to, gene expression, signal transduction, and primary or secondary metabolism. The successful candidates will be part of the Cornell Genomics Initiative; as such, they will participate as an adjunct faculty members in an appropriate Cornell University department.

Applicants should send a curriculum vitae, a three- to five-page statement of research interests, and the names of four references to Gary Blissard, Ph.D., Chair, Plant Molecular Biology Search Committee, Boyce Thompson Institute, Ithaca, New York 14853; e-mail gwb1@cornell.edu. Review of applications will begin November 15 and will continue until the positions are filled. See http://bti.cornell.edu for more information about BTI.

Genomics INITIATIVE CORNELL

National Institutes of Health
National Institute on Aging

The mission of the National Institute on Aging (NIA) is to improve the health of older Americans by supporting and conducting research on the processes of aging, on age-related-diseases, and on the special health problems and needs of the aged. The NIA Intramural Research Program provides a stimulating, academic setting for a comprehensive effort to understand aging through multidisciplinary investigator-initiated research. The program offers many excellent training opportunities in both laboratory based and clinical research with a wealth of valuable resources. The NIA is committed to the development of scientists and provides advanced biomedical research training at all career stages.

Postdoctoral positions are available for those with less than 5 years postdoctoral training.

To apply for a postdoctoral position listed below, submit a curriculum vitae with publication list, three letters of reference, and a short statement of research goals to the correspondent. If you are unable to contact the correspondent using e-mail, mail application to:

National Institute on Aging, Gerontology Research Center
Attn: (Name of Correspondent)
5600 Nathan Shock Drive, Baltimore, MD 21224-6825

Laboratory of Cardiovascular Science

A postdoctoral position is available immediately to study the role of the muscle-specific regulator of apoptosis, ARC (see Circ. Res. 2000, 87:112; J.Biol.Chem.2001, 276:33915), in the survival and differentiation of cardiac and skeletal muscle using mouse embryonic stem cells. Applicants should have demonstrated experience in cell culture and basic molecular biology techniques.
Correspondent: Michael T. Crow, Ph.D. E-mail: crowm@grc.nia.nih.gov

A postdoctoral position is available immediately in the Gene Therapy Unit to study the mechanisms and perspective treatments of chronic heart failure. The qualified individual must have a strong background in cardiovascular physiology, measurements of cardiovascular functions, and surgery in mice and rats. Experience in transgenic technology and knowledge of basic molecular biology techniques is desirable.
Correspondent: Mark Talan, M.D., Ph.D. E-mail: Talanm@grc.nia.nih.gov

Laboratory of Cellular and Molecular Biology

A postdoctoral position is available immediately to study gene expression and molecular pathways relevant to ovarian tumorigenesis. Techniques to be used will include Serial Analysis of Gene Expression (SAGE), cDNA arrays, real-time PCR, as well as other molecular and immunological techniques.
Correspondent: Pat J. Morin, Ph.D. E-mail: morinp@grc.nia.nih.gov

Laboratory of Clinical Investigation

A postdoctoral position is available immediately in the Hematology/Oncology Section to study the role of a novel WD-protein in development and tumorigenesis. Applicants should have experience in cell and molecular biology.
Correspondent: Eric H. Westin, M.D. E-mail: westine@grc.nia.nih.gov

A postdoctoral position is available in the Nuclear Magnetic Resonance Unit to conduct spectroscopic and imaging studies on cartilage tissue derived from tissue engineering protocols and from animals. NMR instrumentation consists of a triple-resonance wide-bore Bruker DMX 400 Avance system with microimaging and solids capability for tissue studies, and a double-resonance Bruker ABX 1.9T/31 cm Biospec for animal studies. Applications are encouraged from those with a background in biological NMR spectroscopy or imaging, or with expertise in cartilage biology who have the desire to learn NMR techniques. website: http://www.grc.nia.nih.gov/branches/lci/nmr/nmr.htm
Correspondent: Richard Spencer, M.D., Ph.D. E-mail: spencer@helix.nih.gov

A postdoctoral position is available to conduct studies on insulin-receptor signaling. Areas of interest include the role of protein-protein interaction in insulin receptor function, as well as the role of caveolin in insulin action. Applicants must have experience in a broad range of advanced molecular biology and/or biochemistry techniques.
Correspondent: Michel Bernier, Ph.D. E-mail: Bernierm@vax.grc.nia.nih.gov

Laboratory of Epidemiology, Demography, and Biometry

Postdoctoral research positions are available in the Epidemiology and Demography Section to conduct epidemiologic research on chronic disease and disability in older populations. This research seeks to develop a thorough understanding of the causal chain of events leading to functional decline and disability, with investigations into the effects of specific chronic conditions, impairments related to strength and balance, pain, exercise, psychological and social factors, and biochemical markers of subclinical disease and frailty.
Correspondent: Jack Guralnik, M.D., Ph.D. E-mail: jg48s@nih.gov

Postdoctoral positions are available in the Neuroepidemiology Section for interdisciplinary epidemiologic studies of brain disease in old age. Areas of interest: genetic markers and inflammatory, metabolic, vascular, and hormonal factors contributing to sub-clinical and clinical outcomes, including MRI and neuropathologic findings, cognitive function and dementia. Opportunities are available to utilize data from large on-going prospective community studies and to develop new studies. Knowledge of epidemiologic principles and training and experience in a related biologic area (including endocrinology, immunology, neuroscience) is required.
Correspondent: Lenore Launer, Ph.D. E-mail: LaunerL@nia.nih.gov

A postdoctoral position is available in the Geriatric Epidemiology Section focusing on interdisciplinary studies of molecular and genetic markers for cardiovascular or musculoskeletal disease, diabetes mellitus, disability or death. Areas of interest include cytokines and acute phase proteins in disease risk, body composition measures and disease risk, and understanding gene/environment interactions.
Correspondent: Tamara Harris, M.D. E-mail: Tamara_Harris@nih.gov

In the Biometry Section a postdoctoral fellowship is available in biostatistics. Research will be conducted in the areas of statistical methods applied to data relevant to the epidemiology and demography of aging, physical and cognitive function, disability, Alzheimer's disease and mortality. A Ph.D. or equivalent in biostatistics or statistics is required. Knowledge of SAS, SUDAAN and S-PLUS and skills in programming high-level languages such as C ++ and SAS-IML is preferred. Must be a U.S. permanent resident.
Correspondent: Dwight B. Brock, Ph.D. E-mail: brockd@gw.nia.nih.gov

National Institutes of Health
National Institute on Aging

Laboratory of Genetics

A postdoctoral position is available for a fellow to become involved in projects studying chromatin remodeling complexes, helicase complexes involved in Werner syndrome, Bloom syndrome and Fanconi Anemia, as well as DNA methyltransferase complexes involved in the ICF syndrome. More information is available at http://www.grc.nia.nih.gov/branches/lg/trru/trru.htm. The successful candidate will obtain training in rapid purification and analysis of multiprotein complexes involved in gene regulation and human diseases.
Correspondent: Weidong Wang, Ph.D. E-mail: wangw@grc.nia.nih.gov

Laboratory of Molecular Gerontology

Postdoctoral positions to study the function of premature aging proteins or mitochondrial DNA repair are available. The laboratory is studying the molecular biochemistry of premature aging disorders and the processing of oxidative DNA damage in nuclear and mitochondrial DNA.
Correspondent: Vilhelm A. Bohr, M.D., Ph.D. E-mail: vbohr@nih.gov

A postdoctoral position is available to develop oligonucleotide based gene targeting reagents designed for genome modulation and targeted gene knockout. The successful applicant must have training in synthetic organic chemistry, preferably with nucleoside and nucleotide experience.
Correspondent: Michael Seidman, Ph.D. E-mail: seidmanm@grc.nia.nih.gov

A postdoctoral position is available to study somatic hypermutation in immunoglobulin variable genes. Research will focus on identifying the DNA polymerases and proteins involved in the mutation mechanism by protein interactions.
Correspondent: Patricia Gearhart, Ph.D. E-mail: gearhartp@grc.nia.nih.gov

A postdoctoral position is available to study DNA helicases defective in premature aging and cancer syndromes. The goal is to understand the roles of human helicases in pathways of genome stability. Areas of interest include DNA replication/repair/recombination and the emerging field of molecular gerontology.
Correspondent: Robert M. Brosh, Jr., Ph.D. E-mail: broshr@grc.nia.nih.gov

Laboratory of Neurosciences

Two postdoctoral positions are available within the Behavioral Neuroscience Section. One position involves assessing age-related cognitive deficits and the effects of novel pharmacological treatments to enhance memory function in aged rodent models, including mouse models of Alzheimer's disease. The second position involves assessing age-related neuromorphological changes using stereological methods, including quantitation of neurons, neuroglia, synapses, amyloid plaques, and capillaries in a variety of rodent models.
Correspondent: Donald K. Ingram, Ph.D. E-mail: doni@vax.grc.nia.nih.gov

A postdoctoral position is available in the Nutritional Molecular Physiology Unit. This position will focus on energy metabolism and glucoregulation in aging and retardation of aging and age-related disease by caloric restriction in primates. Applicants must possess relevant animal model experience. Experience in aging or diabetes-related research in primate or human models is highly desired.
Correspondent: Mark A. Lane, Ph.D. E-mail: MLANE@vms.grc.nia.nih.gov

Research Resources Branch

A postdoctoral position is available in the Flow Cytometry Unit to study the identification of transport proteins in bone marrow progenitors, their relationship to cell cycle regulation, and impact on cancer and gene therapy.
Correspondent: Robert Wersto, Ph.D. E:mail: werstor@grc.nia.nih.gov

NIH-NIA, Bethesda Maryland: Section on Brain Physiology and Metabolism

A postdoctoral position is available to study brain phospholipid metabolism in rodents, using radio- and heavy-isotope labeled tracers including fatty acids. Experience using analytical lipid techniques is required.

Please send a letter of application, C.V. and names of three references to: **Stanley Rapoport, M.D., Section on Brain Physiology and Metabolism, National Institute on Aging, National Institutes of Health, Building 10, Room 6N202, Bethesda, MD 20892 Fax 301-402-0074; E-mail (text or attached MS Word File): sir@helix.nih.gov.**

Laboratory of Genetics

Statistical Geneticist sought for a **Staff Scientist** position, Laboratory of Genetics, National Institute on Aging (NIA). Our laboratory utilizes linkage, affected family member and population-based association studies in attempting to identify human genes involved in multiple clinical phenotypes. Specific current areas of interest include hereditary connective tissue disorders, premature ovarian failure, and studies in the founder population of Sardinia, including the genetic basis of factors in cardiovascular dynamics and specific personality traits. The successful candidate will collaborate with Senior Investigators in the Laboratory of Genetics in the development of specific studies, assessment of sample size, and analysis of data. Resources are also available for the development of independent statistical genetics projects. We are looking for someone with strong interpersonal as well as statistical genetics skills. At least 2 years of postdoctoral experience and basic computer skills are required. Candidates must have experience in linkage analysis, affected family member analysis and quantitative trait analysis. Please send a curriculum vitae and three letters of recommendation to Human Resources, NIA, Intramural Research Program, Gerontology Research Center, Box 26, 5600 Nathan Shock Drive, Baltimore, MD 21224-6825, **Announcement # NIA01-040**. Applications must be postmarked by **November 30, 2001.**

Research Resources Branch & Laboratory of Neurogenetics

Facility Head positions are available in Baltimore, MD (1 position) and Bethesda, MD (1 position). Successful candidates will serve as bioinformatics specialists to support research laboratories. Specialists will provide expertise in troubleshooting molecular bioinformatic analysis problems, install and support hardware and software useful in computational molecular biology, datamining, database searching and creation, as well assist in carrying out molecular, genomic, gene expression, gene regulation, and protein structure and function studies. Applicants must have a working knowledge of the NCBI suite of bioinformatics tools as well as bioinformatics and computational tools from other sources. Applicants should send curriculum vitae, bibliography and three letters of reference, at least two from non-collaborators, to: National Institute on Aging, Gerontology Research Center, Human Resources Office, **Vacancy #NIA-01-047**, 5600 Nathan Shock Drive, Baltimore, MD 21224. Applications must be postmarked no later than **October 31, 2001**.

NIH is an Equal Opportunity Employer

2002–03 Congressional Science and Engineering Fellowship Program

PROGRAM: Scientists and engineers spend one year as special assistants on the staffs of Members of Congress or congressional committees, working in legislative areas requiring scientific and technical expertise. The program includes an orientation on congressional and executive branch operations, and a year-long seminar program on issues involving science and public policy. Fellows receive stipends from their sponsoring societies.

PURPOSE: To provide a unique public policy learning experience, to demonstrate the value of science-government interaction and to make practical contributions to the more effective use of scientific and technical knowledge in government.

CRITERIA: A prospective Fellow must be a postdoctoral to midcareer scientist or engineer; demonstrate exceptional competence in some area of science or engineering; be cognizant of many matters in nonscientific areas; demonstrate sensitivity toward political and social issues; and perhaps most importantly, have a strong interest and some experience in applying personal knowledge toward the solution of societal problems.

SPONSORS: More than 30 national professional scientific and engineering societies will sponsor or cosponsor Congressional Fellows in 2002–03.

American Agricultural Economics Association
American Association for the Advancement of Science
American Association of Colleges of Pharmacy
American Chemical Society
American Dental Association
American Geological Institute
American Geophysical Union
American Institute of Biological Sciences
American Institute of Chemical Engineers
American Institute of Physics
American Meteorological Society
American Nuclear Society
American Physical Society
American Psychological Association
American Society for Microbiology
American Society of Agronomy
American Society of Civil Engineers
American Society of Mechanical Engineers
American Veterinary Medical Association
American Welding Society
Crop Science Society of America
Federation of Animal Science Societies
Geological Society of America
Institute of Electrical and Electronics Engineers-USA
Institute of Food Technologists
Institute of Navigation
International Society for Optical Engineering
Materials Information Society
Materials Research Society
Optical Society of America
Society for Research in Child Development
Soil Science Society of America

Applicants should apply directly to the appropriate professional society. It is acceptable to apply to more than one society. Stipends, application procedures, timetables, and deadlines vary by society. Underrepresented minorities and persons with disabilities are encouraged to apply. Further information about the program and a list of the participating societies, with contact information, is available from:

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE
Congressional Science and Engineering Fellowship Program
1200 New York Avenue, NW, Washington, DC 20005
Phone: 202/326-6700 E-mail: science_policy@aaas.org
Web: www.fellowships.aaas.org

Better world.
Better careers.

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

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

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

Our Functional Genomics Department is dedicated to the identification of novel human disease genes and novel drug targets. Using state-of-the-art techniques in bioinformatics, high-throughput gene expression analysis, antisense, proteomics, transgenic mice, and Drosophila genetics, we work in partnership with our drug discovery groups to identify new therapeutic opportunities and to turn these gene-based discoveries into clinical benefits. We are currently seeks a Sr. Scientist and a Postdoctoral Fellow-Drosophila Genetics to join our team.

Sr. Scientist

Drosophila Genetics

The successful candidate will be responsible for leading a functional genomics laboratory that uses the fruitfly D. melanogaster as a model organism for the identification of new drug targets through molecular genetic analysis of developmental pathways and gene networks related to human disease. Qualifications include a Ph.D. in Biology or Biochemistry with at least 2 years' of postdoctoral experience. Must have several years experience using molecular and genetic methods in Drosophila, be able to direct a core group of research scientists with specific project goals, as well as design appropriate experiments and convey their data and interpretations to other members of a functional genomics team. **Requisition #11044AD.**

Postdoctoral Fellow

Drosophila Genetics

Incumbent will focus on studying Alzheimer's disease related pathways using Drosophila genetics. Qualifications include a Ph.D. in Biology or Biochemistry plus a strong background in genetics and molecular biology are necessary. Experience with the Drosophila system is a plus. Must possess strong communication skills and be able to work effectively as part of a team. **Requisition #11042AD.**

Scientist

We are seeking a self-motivated researcher to conduct innovative research in the mechanisms of diabetes and CV diseases, as well as the characterization of drug interaction with known ion channels in native cells, cell lines and channel-expressing systems. Qualifications include a M.S. degree with 5+ years' experience in the field of study relevant to physiology/pharmacology of ion channels and cardiovascular/endocrine biology. Candidate should possess a good understanding and working skills of contemporary ion channel electrophysiological techniques, such as patch clamp recordings. Basic familiarity with cloning of ion channels, computer based data acquisition/processing/presentation, and experience in small animal handling cannulation/surgery are required. **Requisition #10787AD.**

IT Specialist for Analytical Chemistry

You will be responsible for IT related tasks in a modern central analytical lab: Database management, Automation, Instrument interface, Customer education and training and as the US representative of a global team to develop and implement a state-of-the-art analytical data system. Qualifications include a solid background in analytical chemistry (e.g., NMR, MS) and hands-on experience in chemical structure elucidation. Must be familiar with ACD Labs v4.5 Spectral Laboratory Software Tools Suite to perform spectral predictions, configure and perform structure generator tools (or other spectroscopy tools: e.g., WINNMR, Galactic). A working knowledge in SQL, MS Access and VBA or Visual Basic, as well as ability for Unix and NT; Shell scripting to aid in the interfacing and configuration of instrumentation to the database will also be needed. Familiarity with ODBC, Oracle 8.15+, C or C++ programming, and NT System Administration is a plus. **Requisition #10970AD.**

At Novartis Pharmaceuticals, we offer excellent compensation and benefits programs that reflect our position as an industry leader. The programs include medical, dental, vision, legal and financial planning services, life insurance, 401(k) as well as leadership development initiatives. Find out how fulfilling your career can be.

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

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

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Cancer Biology
University of Missouri-Columbia

The University of Missouri-Columbia (MU), an AAU, land grant, Carnegie Doctoral Extensive, seeks applications for four faculty positions to contribute to a campus-wide, interdisciplinary initiative in cancer biology. These faculty will have primary appointments in the College of Veterinary Medicine, with opportunity for dual appointment(s) in other participating divisions.

Approximately 20 additional faculty positions in cancer biology will be recruited to other MU academic units over the next several years. Our collective goal is to expand an established high-quality treatment and research facility, the Ellis Fischel Cancer Center, an integrated, University-wide, and multidisciplinary cancer research center able to achieve National Cancer Institute designation as a Comprehensive Cancer Center. The successful candidates will be located in recently renovated state-of-the-art office/ laboratories and salary and start-up packages are highly competitive.

Endowed Professor, Tumor Angiogenesis

Candidates are sought at the associate or full professor level for the Zalk endowed position. The candidate must be dedicated to establishing an active research program related to angiogenesis, its control, and its relationship to tumor biology. The primary appointment will be in Biomedical Sciences, College of Veterinary Medicine, with secondary appointment(s) selected to enhance interactions. Applications are presently being received.

Veterinary Pathobiology/Cancer Biology Positions

The successful candidates for the three Veterinary Pathobiology/ Cancer Biology positions will collaborate with a diverse group of faculty who have interest in pathogenesis of infectious and genetic diseases of humans; laboratory and/or food animals; molecular biology; cryobiology; and food safety. Candidates are expected to develop/continue vigorous, externally funded research programs (with a goal of obtaining NCI funding); direct professional, graduate and post-doctoral students; and contribute to professional or graduate student instruction. Excellent collegiate and interpersonal communication skills will be required.

Assistant Professor – Cancer Immunologist

The primary responsibility of this tenure track position will be to conduct high-quality collaborative research. The successful candidate must possess the DVM, PhD, MD degree or the equivalent with postdoctoral experience in immunology. Secondary appointment(s) possible in the School of Medicine related to expertise.

Assistant Professor- Bioinformatics

This tenure track position seeks an individual with particular strengths in life sciences genomics and/or bioinformatics. The chosen candidate must hold the DVM and/or PhD degree with an interest in cancer-related research, however, current cancer research is not necessary for consideration. The University of Missouri-Columbia has significant strengths in life science informatics and bioinformatics, including a National Library of Medicine-funded informatics training program, cross-disciplinary campus focus groups in bioinformatics and computational biology, and the recently created University of Missouri Bioinformatics Consortium. The primary responsibilities will be to conduct high-quality collaborative research in life science informatics or bioinformatics.

Assistant Professor- Virology

This tenure track position seeks an individual with expertise in Virology. Preference will be given to individuals with expertise in viral oncology or molecular mechanisms of viral-induced carcinogenesis. Applicants must possess the DVM, PhD, MD or equivalent degree and relevant postdoctoral experience in Virology/Viral Oncology. Secondary appointment(s) possible in the School of Medicine related to expertise.

Interested individuals should designate the position of interest and submit a curriculum vitae, letter of interest, and contact information for three references to: **Ms. Anne Chegwidden, Veterinary Pathobiology, 201 Connaway Hall, Columbia, MO 65211**. Call Ms. Chegwidden at 573-882-5034 for more information on each position including the names of individual search committee chairs. Review of applications for Veterinary Pathobiology positions will begin November 1, 2001 and continue until the positions are filled.

The University is an Equal Opportunity/ADA Institution.

Postdoctoral Positions

Postdoctoral positions are available to study the translational control of early vertebrate development (Xenopus and mouse) and neuronal synaptic plasticity. One focus will be the molecular mechanisms by which sequence-specific RNA binding proteins regulate translation. In addition, the consequences of translational control on development and synaptic function will be assessed. Biochemistry and molecular biology, oocyte injection, generation of knockout mice, and cell culture are some of the methods that are employed. Recent publications from the laboratory include **Neuron** 21, 1129 (1998), **EMBO J.** 18, 2294 (1999), and **Molecular Cell** 6, 1253 (2000), **Molecular Cell** 4, 1017 (1999), **Cell** 103, 435 (2000), **Nature**, 404, 302 (2000), **Developmental Cell** 1, 201 (2001).

Further information can be found on the web. Interested individuals should email (joel.richter@umassmed.edu) or send CV and the names of three references to: Dr. Joel D. Richter, University of Massachusetts Medical School, Biotech 4, Room 330, 377 Plantation St., Worcester, MA 01605.

UNIVERSITY OF DELAWARE

Faculty Positions (2)
UNIVERSITY OF DELAWARE
Department of Chemical Engineering

The Department of Chemical Engineering at the University of Delaware invites applications for two tenure-track faculty positions. We anticipate making one appointment at the Assistant Professor level and one at the Professor or Associate Professor level. A Ph.D. or equivalent in chemical engineering or a related field is required. Successful applicants will be expected to lead vigorous research programs, teach and advise students at both the undergraduate and graduate levels. The department (http://www.che.udel.edu) is consistently ranked among the ten leading chemical engineering departments nationwide, and applicants for the senior position are expected to have a commensurate record of accomplishment. Applications in all research areas will be considered; the department has especially strong research programs in bioengineering, control, kinetics and catalysis, colloid and surface science, polymers and composites, thermodynamics, separations, and material science. Please send curriculum vitae, a description of research and teaching interests, and the names, addresses, telephone numbers, and e-mail addresses of three references to **Professor S.I. Sandler, Search Committee Chairman, Department of Chemical Engineering, University of Delaware, Newark, DE 19716-3110.** Deadline for application is December 15, 2001.

The University of Delaware is an Equal Opportunity Employer that encourages applications from minority group members and women. For further information, please consult our Web site www.udel.edu.

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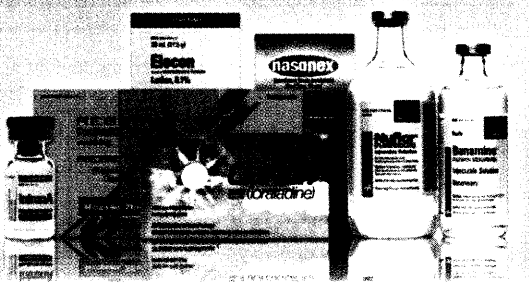

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Kenilworth, NJ

BIOTECHNOLOGY DEVELOPMENT

Senior Engineer

You will plan, supervise and evaluate pilot scale fermentation and recovery studies for monoclonal antibody, hybridoma, gene therapy and recombinant bacterial processes. Requirements include a PhD in chemical/biochemical engineering and 3-6 years of experience in process development, scale-up and clinical production of cell culture products including a background in cGMP production. **Job Code: PAD/SCI/SRI/1337HS**

Principal Engineer

Leading a team of scientists, engineers and operating staff, you will oversee the development, scale-up and technology transfer of purification processes and provide technical support to clinical manufacturing and offshore commercial manufacturing operations. Requirements include a PhD in biochemical engineering or related field, 6+ years of experience (including a background in GMP manufacturing and compliance) and knowledge of protein purification and scale-up principles. **Job Code: PAD/SCI/SRI/141HS**

Scientist I

Providing technical support in mammalian cell line maintenance, you will evaluate/implement new preservation techniques and develop methods to monitor cell banks. Requirements include a BS and 10 years of experience, or an MS in microbiology, cell biology or related field and 5-8 years of experience. A laboratory background (5-10 years) is essential.
Job Code: PAD/SCI/SRI/127HS

Assistant/Associate Scientist I

Responsible for microbiological support testing of R&D products, you will investigate/implement state-of-the-art analytical methods for micro testing and develop/validate new test methods. A BS in biology, 1-5 years of experience and knowledge of cell culture/sterile techniques are required. A background in cell-based bioassays or microbiological assays is desirable.
Job Code: PAD/SCI/SRI/2038HS

STRUCTURAL CHEMISTRY

Postdoctoral Researcher

Responsible for the study and structural analysis of enzymes in complex RNA, emanating from recent structural studies of the hepatitis C virus RNA helicase and RNA-dependent RNA polymerase. This assignment is for one year with the opportunity to renew for one additional year. Requirements include a PhD in Biochemistry, Molecular Biology with experience in macromolecular structure solution and analysis, or 2+ years of experience working with protein/RNA complexes. **Job Code: PAD/SCI/SRI/2090HS**

Union, NJ

CHEMICAL DEVELOPMENT

Senior Scientist

You will design and implement strategies aimed at the discovery, development and optimization of chemical synthesis for the preparation of drug substances. This will involve laboratory experiments to define processes for synthesis of bulk pharmaceutical compounds. A PhD in organic chemistry and 0-4 years of experience, which includes organic synthesis, are required. **Job Code: PAD/SCI/SRI/148HS**

Chemical Engineer

You will perform scale-up and implementation of bulk chemical manufacturing processes; select chemical equipment trains for production processes; and provide technical guidance and supervision to junior engineers or operating personnel. Requirements include a BS and 4-7 years, an MS and 2-5 years, or a PhD and 0-3 years of experience in the chemical processing industry (fine or pharmaceutical bulk chemicals). Knowledge of cGMPs, OSHA guidelines and applicable environmental regulations along with an aptitude for chemical development are necessary.
Job Code: PAD/SCI/SRI/1095HS

Principal Scientist

Design and conduct scientific studies towards the discovery, development and optimization of chemical synthesis for the preparation of drug substances. Requirements include a PhD, 3-6 years of experience including a record of developing and converting new synthetic strategies into useable processes and excellent leadership skills. **Job Code: PAD/SCI/SRI/1081HS**

Assistant/Associate Scientist

You will perform assigned chemical development tasks to support the chemical synthesis and manufacture of bulk pharmaceutical compounds. Requirements include a BS in chemistry or related field and 2-4 years of experience, or an MS in chemistry with 2+ years of experience. A strong R&D aptitude as demonstrated by thesis or technical publication is necessary.
Job Code: PAD/SCI/SRI/762HS

Postdoctoral Scientist

We seek a Scientist in Organic Chemistry with 0-2 years of postdoctoral experience in synthetic organic chemistry research. Demonstrated aptitude for solving R&D problems and familiarity with modern spectroscopic and analytic techniques are essential. **Job Code: PAD/SCI/SRI/322HS**

We offer an excellent compensation package including competitive salary, profit sharing, 401(k) plan, and a cash incentive bonus program. Comprehensive benefits include: group insurance and retirement programs, flexible work arrangements, education assistance, and health and wellness programs.

For more information and to apply online, search jobs at **www.whatdrivesyou.com** or mail your resume, referencing job code, to: Schering-Plough c/o Resume Processing, P.O. Box 549248, Suite 187, Waltham, MA 02454-0248. *By responding to this ad, you may be considered for other potential opportunities throughout the Schering-Plough organization. If a potential match exists, you will be notified.* An equal opportunity employer.

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Schering-Plough
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St. Jude Children's Research Hospital
ALSAC · Danny Thomas, Founder

POSTDOCTORAL RESEARCH ASSOCIATE

A position is available in the Department of Hematology-Oncology at St. Jude Children's Research Hospital in a laboratory focused on determining: (1) cellular and molecular consequences of dysregulation of cyclin D1 in photoreceptors and pinealocytes during development and tumorigenesis; (2) the molecular basis for the co-regulation of cell division and cellular differentiation in skeletal muscle and how abnormalities in this program contribute to malignancy; and (3) novel functions for certain key human tumor suppressor genes. See Skapek SX *et al.*, Science 267:1022-1024, 1995; Skapek SX *et al.*, Mol Cell Biol 16:7043-7053, 1996; Skapek SX *et al.*, J Biol Chem 275:7212-7223, 2000; Skapek SX and Chui CH, Current Opinion in Oncology 12:315-322, 2000 and Skapek SX *et al.*, Oncogene 2001 (in press).

Candidates should possess a Ph.D. (or M.D. with significant research experience) and be familiar with transgenic and knock-out mouse models, cell culture systems and molecular and cellular biology tools.

St. Jude Children's Research Hospital offers state-of-the-art research facilities and supports over 170 postdoctoral research associates among its basic science research laboratories and offers competitive salaries and a generous benefits package. Interested individuals should submit a cover letter describing research interests and a curriculum vitae to:

Stephen X. Skapek, M.D.
Department of Hematology-Oncology
St. Jude Children's Research Hospital
332 N. Lauderdale Street, DTRT 1034
Memphis, TN 38105
e-mail: steve.skapek@stjude.org

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FDA

Director, Division of Viral Products

The FDA, Center for Biologics Evaluation and Research, Office of Vaccines Research and Review is searching for a Director for its Division of Viral Products. The Director is responsible for managing a staff of approximately 75 scientists and support staff in assuring the safety and effectiveness of vaccines used in the prevention of viral diseases. **US Citizenship is required**. Applicants possessing an M.D., PhD. or M.D./PhD. are highly desired. Applicants must have experience in managing a broad scientific research or regulatory program; a demonstrated ability to deal effectively with high-level governmental officials, the scientific and academic communities, medical and health-related organizations, representatives of the regulated industry and others; and the ability to implement equal employment opportunity programs. For additional information including salary and benefits, please contact **Linda McGahey** at **301-827-0655** by November 2, 2001 and/or log on to **www.fda.gov/cber/inside/vacancy.htm**, select Director, Division of Viral Products.

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FACULTY POSITIONS IN FUNCTIONAL GENOMICS

University of California, Lawrence Berkeley National Laboratory, Genome Sciences Department is recruiting 2-3 Principal Staff Scientists to pursue independent research programs. The research will be conducted in our Functional Genomics Center, which has outstanding robotic, engineering, and other resources that will be available to the successful candidate. Applicants are being sought with a proven track record in genomics, genetics and/or multidisciplinary research. The faculty in the Genome Sciences Departments are a highly interactive group who have established several large interdisciplinary collaborations to examine transcriptional regulation, chromosome structure, disease processes, and DNA replication in yeast, drosophila, nematodes, mice, and humans. Close collaborations also exist between programs within Genome Sciences and those at the adjacent University of California Berkeley campus. Startup packages will be provided to successful applicants with the expectation that continuing external funding will be generated. Further information about the Department can be found at http://www-gsd.lbl.gov/index.html.

For questions concerning the position contact Edward Rubin, Head, Genome Sciences Department. For consideration please email by November 1, 2001, a curriculum vitae, a summary of research interests, and the names and contact information of references to biosciemployment@lbl.gov (no attachments), mail to LBNL Staffing, One Cyclotron Road, MS 937-0600, Berkeley, CA 94720, apply online at http://cjo.lbl.gov/, or fax to (510) 486-5870. Reference Job # LS/014113/JS in your cover letter. AA/EOE.

BERKELEY LAB

DIRECTOR CALTECH GENE EXPRESSION FACILITY

Caltech seeks genome scientist to direct its large scale gene expression facility. The purpose of the facility is to provide cutting-edge technology in the area of functional genomics, with initial emphasis on various forms of microarray-based technology for measurement of gene expression. Integration and collaboration in Bioinformatics plus working interactions with many research user groups in Biology, Chemistry, GeoBiology and Engineering are central to the Facility mission. We expect the Facility Director to direct technical staff and to play a leadership role in developing, testing, and introducing new technologies that will define future Facility capabilities in post-genomic biology. Background required is a doctoral degree and postdoctoral research experience in an appropriate area of genomics. Pay commensurate with experience and qualifications.

Applications, including a current curriculum vitae, will be held confidential and should be sent to: **Gene Facility Search Committee, care of Ms. Dee Page, Biology Division 156-29, Caltech, Pasadena CA 91125.** Electronic applications are welcome to: **dpage@caltech.edu.**

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

CALIFORNIA INSTITUTE OF TECHNOLOGY 1891

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Use your life science training and experience as well as your informatics expertise to design and implement software systems that meet the unique needs of our biotech and pharmaceutical clients. Our Project Scientists understand how the data produced from the latest research technologies (e.g., EST/genomic sequencing, RNA and protein expression profiling, etc.) combined with advanced information systems, technologies, and tools (e.g., bioinformatics software tools, databases and OO technologies, ontologies, etc.) are used to accelerate biological discovery programs. Our best Project Scientists know how to apply new technologies quickly and have a broad awareness of how informatics is used to solve biological problems. As a Project Scientist you will draw on your scientific background in working closely with our clients (researchers, IS professionals, managers) to help them determine the best ways to apply informatics to their research challenges. Through your fact finding, experience, and base of knowledge, you will define the system most appropriate to their needs. Together with our system architects, you will translate the needs into functions that the information system must perform. This role requires strong collaboration with the client as well as 3rd Millennium Project Teams. You will drive the project direction and strategy and serve as the scientific mentor for the Project team. You will also write and deliver presentations at international and domestic conferences to promote 3rd Millennium's capability as an innovative player and solution provider to the pharmaceutical and biotech markets.

If you can solve our equation and share our passion for informatics, please send a half-page write-up of a specific accomplishment that is comparable to our posting and demonstrates your most significant work. We believe your accomplishments are more important than your resume. We'll read your reply first.

3rd Millennium

Please send your response to **SCSC911901@3rdmill.com**
Visit our website at **www.3rdmill.com** for more information.

The University of Texas at Austin

Assistant Professor
Molecular Genetics and Microbiology

The Section of Molecular Genetics and Microbiology, The University of Texas at Austin, invites applicants for the position of Assistant Professor in any area of prokaryotic molecular biology. The section has an active, diverse research faculty that includes a substantial group with research interests in prokaryotic microorganisms. The applicant would be expected to initiate a significant research program and would have access to graduate students admitted through two graduate programs, in microbiology and molecular biology.

The University of Texas at Austin has been undergoing a major expansion in the biological sciences, reflecting a renewed commitment to excellence in this area. The position is highly competitive with regard to start-up funds, salary and laboratory space. A new building, housing the Institute of Cellular and Molecular Biology, contains state-of-the-art facilities available to all investigators on campus.

Austin, located on the eastern edge of the Texas Hill Country, is widely recognized as one of America's most attractive and livable cities.

Please send a short statement (1-2 pages) of present and future research interests, a curriculum vitae and the names and addresses of three references to:

Dr. Robert M. Krug
Section of Molecular Genetics and Microbiology
The University of Texas at Austin
2500 Speedway
Austin, Texas 78712-1095

Homepages•http://www.biosci.utexas.edu/mgm/ and http://www.icmb.utexas.edu

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

At **Aptima**, we are dedicated to our commitment to apply advanced human factor principles, cognitive technologies, user-centered design, and engineering expertise as tools to provide human-centered technology solutions to our customers. All our available positions are located in Woburn, Massachusetts, and require either a M.S. or Ph.D. in Applied Mathematics, C.S., Operations Research, or an Equivalent Engineering Related Field.

Senior Staff Scientist:
Supervise research developments in engineering psychology, develop and identify new research methods, mentor staff and guide their research efforts. Present research results to customers and technical peers at research conferences. Knowledge of aviation simulation and virtual computer-assisted simulation methods is essential. Ph.D. required.

Staff Scientist:
Assist in the development and design of Quantitative Organizational Modeling techniques to capture and simulate dynamic performance in complex systems. Knowledge in developing models of large-scale distributed human-in-the-loop systems and human performance modeling is required. Masters Degree required.

Human Factors/Simulation Engineer:
Develop, document, and present designs for complex interactive graphical user interfaces to the project team detailing the human-systems control aspects and the development of the supporting simulation. Knowledge of virtual computer-assisted simulation methods is required. Masters Degree required.

Technical Product Engineer:
Develop and market technology tools and services for modeling large-scaled distributed systems. Knowledge of Quantitative Organizational Modeling, operations research and product development is required. Masters Degree required.

Please send resumes to:
Debra McNeely, Human Resources Manager
Aptima, Inc.
12 Gill Street, Suite 1400
Woburn, MA 01801

UNIVERSITY of VIRGINIA

Faculty Positions
Mellon Prostate Cancer Research Institute
University of Virginia School of Medicine

The newly endowed Mellon Prostate Cancer Institute at the University of Virginia offers an exciting opportunity to exceptional candidates for faculty positions at the assistant, associate, or full professor levels. The Institute is seeking individuals with basic research interests that impinge directly or indirectly on prostate cancer, and who can play a leading role in building a world-class cancer research center. Possible areas of research focus include: genomic instability, chromosome segregation, cell cycle checkpoints, DNA replication recombination and repair, chromatin structure, gene expression, nuclear organization, and related areas. The Institute will offer outstanding start-up funds, laboratory space, and state-of-the-art facilities.

The University of Virginia has a long tradition of excellence in cancer research, and is well known for its uniquely open, interactive, and collegial atmosphere. In the past decade the School of Medicine has undergone a major expansion of its academic faculty, which has moved its basic science departments into the very top echelons nationwide. We seek to develop a multidisciplinary, cutting-edge Institute that will foster close and interactive ties among investigators performing fundamental research and those working on prostate cancer. Other areas of focus in the Mellon Prostate Cancer Institute will include genomics/proteomics, cell signaling, developmental biology, metastasis, and translational research.

Applications are welcomed from individuals with Ph.D. and/or M.D. degrees who have a demonstrated record of outstanding peer-reviewed research. Candidates should submit their curriculum vitae, a brief description of research plans, and the names of at least three references to:

Chair, Mellon Search
University of Virginia Health System
Department of Biochemistry and Molecular Genetics
P.O. Box 800733
Charlottesville, VA 22908-0733

Applications will be accepted until November 15, 2001. The Department strongly encourages qualified underrepresented minorities and women to take advantage of these exceptional opportunities. The University of Virginia is an Equal Opportunity/Affirmative Action Employer.

TWO POSTDOCTORAL RESEARCH FELLOWSHIPS IN HEART MUSCLE AND CARDIOVASCULAR ION CHANNELS, AND TWO UNIVERSITY-INDUSTRY POSTDOCTORAL FELLOWSHIPS, UBC, SFU AND CARDIOME PHARMA CORP.

These positions are offered within the Departments of Physiology at the University of British Columbia, and Kinesiology at Simon Fraser University, and are funded by the Heart and Stroke Foundation of B.C. and Yukon as part of a group grant to Drs. David Fedida (**fedida@interchange.ubc.ca**) and Edwin Moore (**edmoore@interchange.ubc.ca**) at UBC and Drs. Glen Tibbits (**tibbits@sfu.ca**) and Eric Accili (**eaaccili@sfu.ca**) at SFU.

See: **www.physiology.ubc.ca**, **www.sfu.ca/~eaaccili/**, **www.interchange.ubc.ca/edmoore** (Netscape), **www.sfu.ca/~tibbits/**. The University-Industry postdoctoral fellowships are offered in conjunction with Cardiome Pharma Corp (**www.cardiome.com**) and details may be obtained from Dr. David Fedida.

University fellows are expected to participate in ongoing projects utilizing state-of-the-art techniques in cardiac biophysics, electrophysiology, molecular biology, imaging (confocal and deconvolution) and digital image analysis. Projects available range from advanced studies of ion channel structure-function using fluorescent labeling of residues and following the structural changes that accompany gating, to studies of ion channel processing and surface expression of cardiac proteins. The Univ/Industry fellows will be responsible for the establishment of new in-vivo and in-vitro models of cardiovascular disease at Cardiome. Successful candidates will have a consistent record of training and publication in superior journals. Background should include a Ph.D. in the life or physical sciences with some background in the areas of research outlined above. Commensurate with these requirements we are offering competitive salary awards and the opportunity to live and work in one of the most beautiful locations in North America. If you meet the above requirements, please contact any of the above individuals in the first instance or submit your resume and cover letter to:

Department of Physiology
University of British Columbia
2146 Health Sciences Mall
Vancouver, BC
V6T 1Z3 Canada

The Field Museum

• Two Systematic Botany Positions •

The Field Museum is seeking two outstanding systematic botanists for career-track appointments in the Department of Botany. Individuals pursuing innovative specimen-based research in (1) Pteridophytes or Fungi, including Lichens, or (2) Angiosperms, who will develop a strong field program and actively use the collections are encouraged to apply. Candidates who can also make important contributions in a second interdisciplinary field such as biogeography, ethnobotany, neotropical diversity, population genetics, symbiosis/mutualisms, or theoretical systematics will be given special attention. In addition to research, responsibilities include curation of relevant collections and participation in public learning programs (including exhibits and informal education), development, and administrative and service activities. The successful candidates will have a Ph.D., a proven record of scientific achievement, and the ability to establish an externally funded research program. There are opportunities for participating in undergraduate and graduate training and for teaching at local universities. One of these positions could be filled at the Associate or Full Curator rank.

The Botany Department is part of the Museum's Center for Evolutionary and Environmental Biology that includes the Departments of Geology and Zoology and the Museum's Environmental and Conservation Programs. Facilities include over 2.6 million botanical specimens (including one of the world's richest collections of neotropical plants and fungi), an outstanding library, a well-equipped molecular systematics laboratory, and excellent computer facilities. Deadline for receiving applications is December 15, 2001. Please submit a Curriculum Vitae; a statement of research objectives; names, addresses and contact numbers of at least three references; and copies of relevant publications to: Search Committee, Department of Botany, The Field Museum, 1400 South Lake Shore Drive, Chicago, IL 60605-2496. E-mail inquiries: botany@fmnh.org The Field Museum is an equal opportunity institution. For more information visit: www.fieldmuseum.org/research_collections/botany/default.htm

The University of Texas at Austin

Assistant Professor
Molecular Genetics and Microbiology

The Section of Molecular Genetics and Microbiology at The University of Texas at Austin invites applicants for a tenure-track faculty position at the Assistant Professor level. The Section has a scientifically diverse faculty and is especially interested in applicants in the areas of molecular genetics, molecular and developmental immunology, control of cell growth and proliferation, chromatin and transcriptional control, signal transduction, genomics and nucleic acid-protein interactions. Outstanding applicants in other areas will also be considered. The successful candidate will be eligible for membership in the Institute for Cellular and Molecular Biology, and will have the opportunity to participate in several graduate programs. The position offers excellent start-up funds, salary and laboratory space in a dynamic, highly interactive research environment. Applications received prior to December 1, 2001 will receive top priority.

Austin, located on the eastern edge of the Texas Hill Country, is widely recognized as one of America's most attractive and livable cities.

Please send curriculum vitae, list of publications, a short (1-2 page) research plan, and three letters of recommendation to:

Dr. Robert M. Krug
Section of Molecular Genetics and Microbiology
The University of Texas at Austin
2500 Speedway
Austin, Texas 78712-1095

Homepages•http://www.biosci.utexas.edu/mgm/ and http://www.icmb.utexas.edu

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

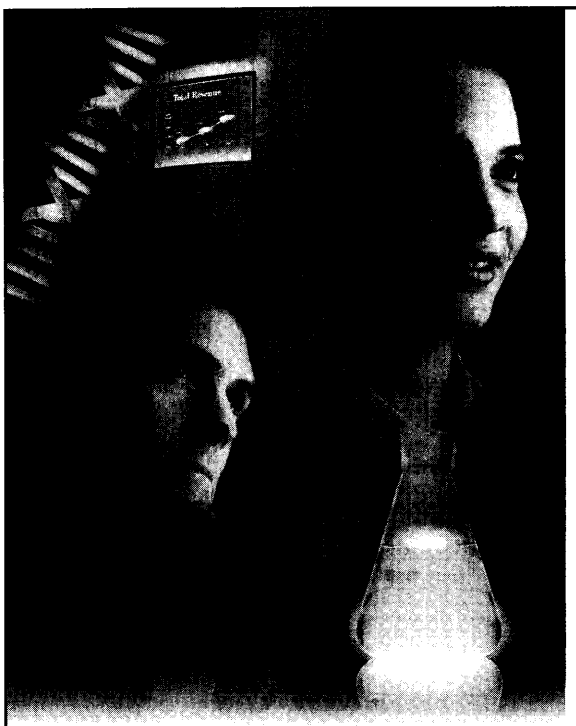
Tenure-Track Faculty Position
Assistant Professor of Wildlife Ecology

The Department of Biology and Wildlife and the Institute of Arctic Biology at the University of Alaska Fairbanks seek an Assistant Professor of Wildlife Biology. Applicants must have an earned Ph.D. in Wildlife Ecology, Conservation Biology, or a closely related discipline. Postdoctoral and teaching experience, a strong record of extramural funding, the ability to supervise graduate students, collaborate with fellow faculty, and interact favorably with state and federal wildlife agencies are expected.

The candidate must bring an innovative approach and play an important role in maintaining the excellence of our program in wildlife ecology. Preference will be given to applicants conducting quantitative research combining application and theory, addressing spatial dynamics of habitats and vertebrate populations. This position is 50% research and requires a teaching load of two courses per year. The successful candidate will teach an undergraduate wildlife management course, and develop and collaborate on graduate offerings. Numerous field stations and laboratory facilities are available at IAB to conduct research on captive and wild animals, including the R.G. White Large Animal Research Station, Toolik Field Station, Bonanza Creek LTER site, Spatial Ecology Laboratory, Alaska Geobotany Center, and the DNA Core Facility. Extensive collections of birds and mammals are available for study at the University of Alaska Museum. The successful candidate will have the opportunity to interact and collaborate with faculty studying a diverse array of topics including plant-animal interactions, population, nutritional, and behavioral ecology, wildlife diseases, metapopulation dynamics, population genetics, spatial ecology, and the conservation of birds and mammals. Additional details about our program can be found at our website http://mercury.bio.uaf.edu.

Applications must be received by 26 October 2001, and shall consist of a cover letter, curriculum vitae, 2 page statement of research interests, 1 page statement of teaching interests, UAF application form (available at **http://www.alaska.edu/hr/application/employment.app.0996.pdf**), and letters from 3 references. Contact **Eric Rexstad (ffear@uaf.edu), Institute of Arctic Biology, University of Alaska Fairbanks, Fairbanks, Alaska 99775-7000**.

The University of Alaska Fairbanks is an Affirmative Action Employer. Women, protected, and minority applicants are encouraged to apply.



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The Face *of* Pfizer

careers that matter

The best is getting even better! As the world's largest pharmaceutical research enterprise, Pfizer is dedicated to providing the best innovations in medicine while pursuing tomorrow's discoveries in research and development. With an R&D budget of $5.1 billion, our team has spurred Pfizer's exceptional performance in 30 countries and across 6 continents. If you share our dedication to discovering, developing and delivering medicines to improve the health of both people and animals worldwide, we want yours to be the newest Face of Pfizer. Consider the following opportunities at Pfizer Global Research and Development facilities in Ann Arbor, Michigan.

Research Associate/Sr. Research Associate, CNS Molecular Sciences

Supervising a group of Postdoctoral- and graduate-level scientists aimed towards investigating the molecular mechanisms underlying schizophrenia and depression, you will be a pivotal member of the disease teams that are developing drugs to treat these disorders. You will design and prosecute experimental procedures in order to identify and validate the molecular and cell biology targets to support PsychoTherapeutics Drug Discovery. You will also collaborate closely with other teams designing new drugs and summarize scientific efforts in internal documents and external publications. You must have a PhD in Molecular Biology, Cell Biology, Biochemistry, Genomics or a related area, several years experience in CNS research and drug discovery, and familiarity with industrial environments. Req. #21Aug0107035-1

Research Associate/Sr. Research Associate, CNS Molecular Sciences

Capitalize on your expertise in second messenger molecules, signal transduction mechanisms and CNS biology by leading and developing target validation studies and interpreting data from CNS tissues and disease models. You will work with Pharmacology, Screening and Chemistry groups to prioritize and translate your potential targets into a form where they are amenable to drug discovery. This position requires a PhD and 3-5 years postdoctoral experience. Req. #21Aug0107035-2

Scientist/Sr. Scientist, CNS Molecular Sciences

In this role, you will design and carry out laboratory procedures to investigate the molecular mechanisms underlying CNS psychiatric disorders in order to develop PsychoTherapeutics. You must have a BS or PhD in Molecular Biology, Cell Biology, Biochemistry or Genomics and a thorough knowledge of the CNS field as it relates to those disciplines. A successful record of publication is desirable. Req. #21Aug0107040

Associate Scientist

As a member of the Molecular Sciences and Technology Biomarkers Team, you will participate in the design and development of novel immunological and biochemical assays in order to track disease progression. You must have a BS in Biology, Biochemistry or a related field and 3-5 years experience or an MS and 1-2 years experience. You'll also need a demonstrated knowledge of the design and development of immuno-assays using conventional and novel technology and a thorough understanding of database management as well as established molecular and biochemical techniques. Req. #21Aug0107038-1

MRI Expert

Acting as our scientific MRI expert, you will be responsible for the daily operation of a Bruker 7T, 210/AS MRI, developing MRI protocols for imaging *in vivo* small animal and *ex vivo* biological specimen and image data analysis. You'll need a PhD, preferably in Biophysics, Bioengineering or a related Biological Science field, and 5+ years research experience in an academic or pharmaceutical industry setting. In addition, you'll have expertise in pulse sequence development and selection, FT coil design, developing histological correlations to MR images, 2D/3D data rendering and animation, data formatting and archiving, MRI scan library development and use of visualization software tools. Req. #12Jul0106167

Micro-CT Expert

Acting as our scientific micro computed tomography (micro-CT) expert, you will be responsible for the daily operation of an EVS mouse/rat micro-CT scanner, developing *in vivo* and *ex vivo* imaging protocols and image data analysis. You'll need a PhD, preferably in Bioengineering, Mathematics, Computer Science, or a related Biological Science field and 5+ years research experience in an academic or pharmaceutical industry setting. You'll also bring documented experience using a micro-CT scanner, particularly a cone beam scanner using the Feldkamp reconstruction algorithm, experience with imaging live animals, computer expertise, and skills in image reconstruction, 2D/3D visualization, data analysis and archiving, histological registration and validation. Req. #12Jul0106168

Pfizer offers an exceptional work environment complete with competitive salaries, excellent benefits and training opportunities designed to develop your professional talents. We encourage all applicants to apply by emailing your resume, indicating the appropriate Req. # in the subject field, to SCI@pfizerresumes.com. If necessary, you may also mail your resume, indicating Req. #, to Pfizer Resume Processing Center, 630 Boston Road M-104, Billerica, MA 01821, Attn: Softshoe Resumes. An equal opportunity employer, Pfizer offers a workplace rich with diversity and potential.

Pfizer

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CONDENSED MATTER AND BIOPHYSICS POSITIONS
Indiana University, Bloomington

The Physics Department at Indiana University anticipates a significant buildup of its condensed matter and biophysics groups over the next few years. In particular, we aim to build a strong and coherent research effort in biophysics and soft condensed matter physics that will complement and enhance both our ongoing work in the Physics Department and other burgeoning interdisciplinary centers on the Bloomington campus. Our present work includes experimental research on biomaterials, neutron scattering, and electronic transport in spintronic and organic materials. Relevant new centers are focusing research on biomolecular measurements and instrumentation and on bioinformatics. A large new multidisciplinary science building is being designed to enhance state-of-the-art, cross-department collaborations with emphasis on the biosciences. As part of the physics build-up, we anticipate filling both senior (tenured) and junior (tenure-track) faculty positions for fall 2002.

At the senior level, we seek **PHYSICISTS** (theorists or experimentalists) with a clear record of first-rate research productivity involving strong graduate student supervision and with the vision and breadth to lead a vital group encompassing both their own research interests and the efforts mentioned above. The opportunity to oversee additional hires of junior faculty is very likely to materialize over the next few years to help the successful candidates realize their vision.

At the junior level, we welcome applications for a faculty position in experimental or theoretical biophysics/soft condensed matter physics. Successful candidates for the junior position should have demonstrated the potential to lead a first-rate research program with impact on one or more of the areas mentioned above.

In all cases, the candidates should also have the ability to teach physics effectively at both undergraduate and graduate levels. Please send applications including curriculum vitae and a statement of intended research directions to: **Faculty Search Committee, c/o Professor James Musser, Department of Physics, Indiana University, Bloomington, IN 47405** and arrange to have a minimum of three letters of reference sent to the same address. Specify in the application letter whether your interest is in a junior or senior position. Applications received by January 1, 2002, will receive priority. For more information, see **website: http://www.physics.indiana.edu/**. *Indiana University is an Equal Opportunity/Affirmative Action Employer. Women, minority candidates, and couples are urged to apply.*

BIOLOGY FACULTY

The Biology Department at Rider University invites applications to fill two tenure-track positions in plant biology/ecology and marine/organismal biology. Successful applicants should have broad training in their respective fields. Candidates must have a Ph.D. and a strong record of research accomplishments, postdoctoral research training, and demonstrated interest and ability to teach undergraduates. Teaching responsibilities will include both nonmajor and major introductory-level courses and upper-level courses in the area of expertise. Faculty are expected to develop research programs that involve students. In addition, contributions may be made to marine science, environmental science, and biochemistry programs as well as teacher training initiatives. For more information, visit our **website: http://www.rider.edu**. Applications should include curriculum vitae, detailed statement of teaching interests and research goals, and three letters of reference sent to: **Rosemary Molloy, Manager of Employment, Human Resources, Rider University, 2083 Lawrenceville Road, Lawrenceville, NJ 08648**. Review of applications will begin on December 20, 2001, and continue until the positions are filled. Queries should be directed to: **Dr. James Riggs, Chair of the Biology Department; e-mail: riggs@rider.edu**. *Rider is an Equal Opportunity/Affirmative Action Employer and genuinely seeks a diverse applicant pool.*

POSITIONS OPEN

H. MARVIN POLLARD PROFESSORSHIP IN GASTROINTESTINAL MALIGNANCY
University of Michigan Medical School
Department of Internal Medicine

The Department of Internal Medicine at the University of Michigan Medical School invites applications from outstanding Investigators pursuing research with clear-cut relevance to the pathogenesis and/or treatment of gastrointestinal malignancy for the H. Marvin Pollard Professorship in Gastrointestinal Malignancy. The research programs of candidates should emphasize molecular genetic, animal model, and/or cell and developmental biology approaches to colorectal, pancreatic, stomach, or esophageal cancer.

Candidates for the position must hold M.D. and/or Ph.D. degree(s) and have established a strong, independent, and well-funded research program with obvious relevance to the gastrointestinal malignancy area. Appointments will be at the **ASSOCIATE PROFESSOR** or **PROFESSOR** level in accordance with the qualifications and experience of the candidate. The endowed H. Marvin Pollard Professorship in Gastrointestinal Malignancy will support the salary, benefits, and research efforts of a nationally or internationally recognized Investigator pursuing research in the gastrointestinal malignancy area.

Candidates are invited to submit curriculum vitae, one- to-two-page research plan, and list of three references to:

H. Marvin Pollard
Professorship Search Committee
c/o Mr. Jeffery L. Cole
Division of Gastroenterology
Department of Internal Medicine
University of Michigan Medical Center
1150 West Medical Center Drive
6520E MSRB I, Box 0682
Ann Arbor, MI 48109-0682

ASSISTANT PROFESSOR, BIOLOGY. The Department of Biology at Shippensburg University invites applications for a tenure-track Vertebrate Zoologist position starting August 2002. Responsibilities include teaching vertebrate zoology, introductory biology courses, and an upper-division course in an area of specialty. Ability to teach comparative anatomy preferred. Scholarly activity will be required. The successful candidate will be expected to have a Doctorate from an accredited institution completed by December 31, 2001; a strong commitment to undergraduate instruction; and the equivalent of two years of teaching experience at the college level. A successful demonstration of teaching effectiveness and a scholarly seminar will be required as part of the on-campus interview. Applicants should send curriculum vitae; official transcripts (both graduate and undergraduate); a statement of teaching philosophy and research interests; and the names, addresses, and telephone numbers of three references to: **Zoologist Search Committee, Department of Biology, Shippensburg University, 1871 Old Main Drive, Shippensburg, PA 17257-2299**. Receipt deadline for application materials is January 10, 2002. Competitive salary and excellent benefits package. *Shippensburg University is an Equal Opportunity Employer. Candidates must furnish proof of eligibility to work in the United States upon appointment.*

ZOOLOGIST
BIOLOGY

Illinois College seeks applications for a tenure-track **ASSISTANT PROFESSOR** starting fall 2002. Ph.D. required. Teaching includes zoology, genetics, and introductory courses.

Send cover letters, curriculum vitae, graduate transcripts, statement of teaching philosophy and research, and names and contact information of three references to: **Dr. Lawrence W. Zettler, Chair, Search Committee, c/o Office of Academic Affairs, Illinois College, 1101 West College Avenue, Jacksonville, IL 62650-2299**. *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

FACULTY POSITION
ANIMAL DEVELOPMENTAL BIOLOGY
Indiana University, Bloomington

The Department of Biology invites applications for a tenure-track **ASSISTANT PROFESSOR** working in the area of animal development. We seek candidates whose research focuses on the evolution of developmental strategies and/or the development of model organisms such as *Drosophila, C. elegans*, zebrafish, and mouse.

The position is part of a significant expansion of IU-Bloomington's life sciences. The expansion includes construction of two major research buildings; creation of a new interdepartmental program in biochemistry and biophysics; establishment of the Center for Genomics and Bioinformatics; and numerous recent hirings in the areas of microbiology, biochemistry, cell and developmental biology, molecular evolution, and ecology. One consequence of this expansion is that we welcome applications from two-career couples.

The successful candidate will be provided with a competitive start-up package and will be expected to establish a vigorous, externally funded research program and to participate in teaching undergraduate and graduate courses. For more information about the Biology Department and for links to information about the campus and the Bloomington community, see **website: http://www.bio.indiana.edu**.

Candidates should send curriculum vitae; a statement of research (past, present, and planned); representative publications; and arrange to have three (or more) letters of recommendation sent to: **Professor Susan Strome, Animal Development Faculty Search, Department of Biology, Indiana University, 1001 East Third Street, Bloomington, IN 47405-3700**. Review of applications will begin November 15, 2001, and will continue until suitable candidates are identified. *Indiana University is an Affirmative Action/Equal Opportunity Employer. Women, minority candidates, and couples are encouraged to apply.*

FACULTY POSITIONS IN BIOLOGY
Westmont College

We invite applications for two tenure-track **ASSISTANT/ASSOCIATE PROFESSOR** openings: (1) developmental biology and (2) ecology/evolution or animal behavior. Teach courses in introductory core and in area of expertise. Involve undergraduate students in a vigorous research program. Ph.D. required; postdoctoral research and teaching experience preferred. Westmont is a Carnegie Level I liberal arts college stressing excellence in undergraduate teaching, scholarship, and commitment to the Christian faith. Candidates are expected to contribute to the character and mission of the College. Information can be obtained from **website: http://www.westmont.edu/departments/biology/position**. Please send curriculum vitae, research and teaching interests, and names of three references to: **Search Chair, Biology Department, Westmont College, Santa Barbara, CA 93108**. Review of applications will commence on 1 November 2001.

Women and minorities are encouraged to apply.

BOTANIST. Hillsdale College, an independent liberal arts college, seeks broadly trained Botanist dedicated to undergraduate teaching and research. Located in south central Michigan, Hillsdale College owns Slayton Arboretum (50 acres) and Hillsdale College Biological Station (Rockwell Lake: 670 acres). Must demonstrate effective design and teaching of botany classes and an ability to supervise research that utilizes the facilities. **TENURE-TRACK POSITION** with Ph.D. expected. Starting date: August 2002. For detailed job description, see **website: http://www.hillsdale.edu/academics/bio**. Send cover letter; curriculum vitae; three letters of recommendation; a statement of educational philosophy/methods; and a statement of research interests on or before December 17, 2001, to: **Dr. Robert Miller, Biology Department Chair, Hillsdale College, Hillsdale, MI 49242. E-mail: bob.miller@hillsdale.edu; Telephone: 517-607-2393**.

Postdoctoral/scientist positions: Three positions are available in the newly formed laboratory at the Diabetes Branch of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), National Institutes of Health (NIH), to study pancreatic islet cell development, with an emphasis on islet stem cell biology and applications of islet transplantation to treatment of diabetes. Applicants are expected to have a strong background in cellular and developmental biology. Expertise in biology of pancreas is preferred but not required. The positions offer an exceptional opportunity to study pancreatic differentiation using several model systems, and to explore the relationships between pancreatic and non-pancreatic development within the interdisciplinary approaches of stem cell biology. Salary is commensurate with experience. Interested applicants should send a curriculum vitae and names of three references to: **Ms. Kay Place, NIDDK/NIH, Bldg. 10, Rm. 9N222, 10 Center Dr., Bethesda, MD 20892-1818.**

Research associate/technician: Position is available in the newly formed laboratory at the Diabetes Branch of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), National Institutes of Health (NIH), to study pancreatic islet cell development and applications stem cell technology to treatment of diabetes. Applicant must have a B.S. or M.S. degree in biochemistry, molecular biology or cell biology with at least 2 years of professional experience. Expertise in standard molecular biological, biochemical, and mammalian cell culture techniques is required. Responsibilities include performing laboratory experiments independently as well as a part of a team, keeping records of experimental procedures and reagents, and conducting laboratory management/organizational tasks. Salary is commensurate with experience. Interested applicants should send a curriculum vitae to: **Ms. Kay Place, NIDDK/NIH, Bldg. 10, Rm. 9N222, 10 Center Dr., Bethesda, MD 20892-1818.**

THE UNIVERSITY OF TEXAS
HOUSTON
HEALTH SCIENCE CENTER

Department of Microbiology and Molecular Genetics
Seeks Assistant Professor

The Department of Microbiology & Molecular Genetics at The University of Texas Medical School at Houston, seeks an exceptional scientist for a tenure track position at the Assistant Professor level. The successful candidate should have a Ph.D. and/or M.D., and several years postdoctoral experience. Excellence in research is of greater significance than the particular area of research; however, the Department is especially interested in research areas involving eukaryotic microbial molecular genetics, physiology and genomics. The successful candidate will join a department with strengths in the area of cell signaling, signal transduction and the molecular genetics of prokaryotes ad lower eukaryotic microbes involving a diversity of microbial systems. The successful candidate will receive a competitive salary and start-up package and will be expected to participate in teaching graduate students and medical students. Applicants should submit a curriculum vitae, the names of at least three references and a statement of their research goals and interests, including a description of how their research program reflects the future directions of microbiology. For full consideration, completed applications should be submitted by December 1, 2001. Applications should be submitted to:

Samuel Kaplan, Ph.D.
Microbiology & Molecular Genetics
The University of Texas Medical School
PO Box 20708
Houston TX 77225
(713) 500-5502
Fax: (713) 500-5499
E-mail: Samuel.Kaplan@uth.tmc.edu
Web Address: www-mmg.uth.tmc.edu

The University of Texas Health Science Center-Houston is an Equal Opportunity Employer/Women and Minorities are encouraged to apply.

POSTDOCTORAL RESEARCH STAFF MEMBER

The Center for Accelerator Mass Spectrometry (CAMS) at Lawrence Livermore National Laboratory (LLNL) is seeking a postdoctoral research scientist in terrestrial carbon-cycle studies. The overall CAMS mission is the utilization of a wide-range of isotopic and ion beam analytical methods to solve problems in basic science research and technology development. The successful applicant will work within the geosciences radiocarbon group to collaborate in and develop experimental programs to study terrestrial carbon cycling. Will work as the primary LLNL representative in the collaborative Enriched Background Isotope Study (EBIS) project. EBIS is a 3-year multi-institutional project to gain insights into below ground carbon cycling in a forest ecosystem, using AMS measurements of a ^{14}C tracer spike applied over large areas of Department of Energy's Oak Ridge Reservation in 1999.

The successful applicant will interact closely with EBIS researchers at the other participating institutions, and will collaborate scientifically in one or more major program areas. These include studies of: the origin and transport of soil organic matter (SOM); quantification of components of soil respiration; root turnover times; residence times for protected and unprotected SOM pools; the roles of bacteria and macrofauna in carbon transport and sequestration; and data synthesis and modeling. Other duties will include managing and assisting in the flow of ca.1000 EBIS samples per year through the CAMS laboratory, participating in technique development and data analysis as part of the overall activity of the natural ^{14}C research group. This position reports to the director of CAMS.

This position requires a recent Ph.D in ecology, biology, biogeochemistry or related field. Experience in sample preparation and interpretation of stable isotope and ^{14}C analyses is desired.

The position is for two years, with the option of a third year, the salary is open, and LLNL offers full, competitive benefits. If interested, reference Department **AJSC9S1EZ** and send resume to camspostsc@llnl.gov. E-mail questions to Linda McMullen at mcmullen3@llnl.gov. We are proud to be an equal opportunity employer with a commitment to workforce diversity.

University of California
Lawrence Livermore National Laboratory
Think BIG

For information about other employment opportunities, visit our website:

www.llnl.gov/jobs

FACULTY POSITION
MOLECULAR BIOPHYSICS AND STRUCTURAL BIOLOGY
Department of Biochemistry and Cell Biology
Rice University

Applications are invited for a tenure-track faculty position in molecular biophysics. All biophysics research areas will be considered, but special consideration will be given to applicants whose research is in the area of structural biology and X-ray crystallography. The position can be at the **ASSISTANT, ASSOCIATE**, or **FULL PROFESSOR** level, but senior candidates are particularly encouraged to apply. The X-ray Diffraction Center is located in the newly renovated Keck Hall with state-of-the-art facilities that include a recently installed Rigaku generator and an MSC Jupiter140 CCD detector. The Center also has an interactive graphics facility with an SGI-based virtual reality environment. An endowment from the Kresge Foundation provides an operational budget for the Center and for future equipment upgrade/replacement. Rice is also the lead institution in the Gulf Coast Protein Crystallography Consortium, which is constructing a beamline at Louisiana State University's Center for Advanced Micro Devices (CAMD) synchrotron facility.

Candidates must have completed a Doctoral degree, have postdoctoral training, exhibit outstanding communication and leadership skills, and have a record indicating exceptional potential or demonstrated excellence in research and teaching. The successful candidate will be expected to develop and maintain a vigorous research program supported by extramural funding and participate in graduate and undergraduate teaching. Review of submitted applications will commence immediately and continue until the position is filled. Please send a letter of application, curriculum vitae, summary of past research and statement of future research plans, and arrange for four letters of reference to be sent to:

Molecular Biophysics Faculty Search Committee
Department of Biochemistry and Cell Biology
Rice University, MS–140
P.O. Box 1892
Houston, TX 77251-1892

Rice University is an Equal Opportunity/Affirmative Action Employer; women and minority candidates are especially encouraged to apply.

EVOLUTIONARY GENETICIST

Tenure-track position at the **ASSISTANT PROFESSOR** level beginning August 2002 for an Empirical Geneticist whose research program should use molecular methods to address genetics in an evolutionary context. Candidates must possess a Ph.D. and have the potential to develop a research program involving significant undergraduate participation. Responsibilities include teaching upper-division courses in the areas of genetics and/or evolution, participation in the introductory curriculum, and academic advising. Applicants should send curriculum vitae, statement of teaching philosophy, summary of research interests, and names and telephone numbers of three references to: **Professor David O. Ribble, Chair, Department of Biology, Trinity University, 715 Stadium Drive, San Antonio, TX 78212**. Application deadline is 29 October 2001. *Trinity University is an Equal Opportunity/Affirmative Action Employer. Women and minority candidates are strongly encouraged to apply.*

WILDLIFE BIOLOGISTS

Two **ASSISTANT PROFESSOR** positions in Department of Fishery and Wildlife Biology, Colorado State University, Fort Collins. Mammalian Ecologist emphasizing research on large mammals with preference given to those with experience in nutrition or disease. Avian Ecologist emphasizing conservation and management of avian species. Closing dates: 26 October and 16 November 2001. See **website: http://www.cnr.colostate.edu/FWB/** for details. *CSU is an Equal Opportunity/Affirmative Action Institution.*

POSITIONS OPEN

ECOLOGISTS

Department of Biology and Microbiology, California State University, Los Angeles, seeks two tenure-track **ASSISTANT PROFESSORS** starting fall 2002. Ph.D.s required. Successful applicants are expected to establish a productive, externally funded research program and participate in the Center for Environmental Analysis (**website: http://cea-crest.calstatela.edu/**), an NSF-funded center conducting multidisciplinary environmental research and instruction. Core facilities provide greenhouse culture, marine and freshwater culture, animal care, DNA sequencing, image processing, GIS analysis, and simulation modeling. Individual research space is provided. Relocation expenses and competitive start-up funds are available. Teaching opportunities include introductory classes, courses in the areas of specialty, and graduate seminars. Applications should include curriculum vitae, statements of research interests and teaching philosophy, and three letters of recommendation. Review of applications begins 1 October 2001 and continues until the positions are filled.

MOLECULAR ECOLOGIST

The successful candidate will apply molecular techniques to nonmicrobial taxa to address evolutionary, ecological, or environmental questions. Submit application or questions to: **Dr. Carlos Robles, Director of CEA-CREST, Molecular Ecologist Search Committee, California State University, Los Angeles, CA 90032-8201. FAX: 323-343-5795; e-mail: crobles@calstatela.edu**.

MICROBIAL ECOLOGIST

The successful candidate will be a broadly trained Scientist applying microbial methods to ecological or environmental questions at any organizational level (molecules, organisms, populations, or ecosystems). Submit application or questions to: **Dr. John Gamon, Microbial Ecologist Search Committee, Department of Biology and Microbiology, California State University, Los Angeles, CA 90032-8201. FAX: 323-343-6451; e-mail: jgamon@calstatela.edu**.

An Equal Opportunity/Title IX/Americans With Disabilities Act Employer. Qualified women and minorities are encouraged to apply.

BIOLOGY: ECOLOGIST. North Central College invites applications from broadly trained Ecologists for a tenure-track appointment at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level to begin September 2002. Ph.D. required; postdoctoral experience preferred. Applicants should have a strong commitment to excellence in teaching and undergraduate research. Teaching assignments include courses in ecology, botany, and environmental biology. The successful candidate will have the opportunity to develop additional courses in her/his area of expertise including field courses. Additionally, the successful candidates will participate in our introductory biology sequence and direct undergraduate students in research. North Central College, located 30 miles west of Chicago in the Illinois research and development corridor, is a 140-year-old comprehensive liberal arts college of 2,500 students with a strong tradition in biology. For more information, see **website: http://www.noctrl.edu/academics/departments/biology/department_site/biohome.htm**. Send letter of application, curriculum vitae, outline of undergraduate research plans, statement of teaching philosophy, graduate and undergraduate transcripts, and have three letters of recommendation sent to: **Dr. Thomas Williams, Search Committee Chair, c/o Academic Affairs Office, North Central College, P.O. Box 3063, Naperville, IL 60566-7063**. Review of applications begins November 28, 2001, and continues until the position is filled. *Equal Opportunity Employer. We strongly encourage applications from women and minority candidates.*

POSITIONS OPEN

TWO ASSISTANT PROFESSOR POSITIONS

The University of Mississippi, Department of Biology, invites applications for two Assistant Professor positions (tenure track) to complement the Department research focus in ecology, evolution, and conservation. Both appointments require the Ph.D. in biological sciences or a related discipline and demonstrated excellence in research and teaching. Successful candidates will be expected to establish extramurally funded research programs involving Doctoral training. In addition to specific duties listed below, the successful candidates will teach nonmajors biology courses on rotation, advise undergraduate students, direct graduate and undergraduate research, and provide service to the Department and the University. (1) Vertebrate physiology: Candidates having molecular/cellular or whole animal approaches to the study of vertebrate physiological processes within an environmental context are especially desirable. Those with a comparative focus will be considered. The incumbent will teach general physiology and courses in specialty. (2) Population genetics: We seek an individual who uses contemporary mathematical and molecular techniques in the study of population genetics. The incumbent will teach population genetics, general genetics (on rotation), and courses in specialty. Submit (1) statement of research and teaching interests and philosophy, (2) curriculum vitae, (3) reprints of up to five recent published or submitted papers, (4) evidence of teaching effectiveness, and (5) names and postal and e-mail addresses of four references to: **Dr. Glenn Parsons** (physiology) or **Dr. Richard Buchholz** (population genetics), **Department of Biology, P.O. Box 1848, University of Mississippi, University, MS 38677-1848. Website: http://www.olemiss.edu**. Materials may be submitted electronically to **e-mail: biology@olemiss.edu**. Positions available fall 2002. Review of applications begins 1 October and continues until positions are filled. *The University of Mississippi is an Affirmative Action/Americans with Disabilities Act/Equal Opportunity Employer. Women and minorities are especially encouraged to apply.*

COMPUTATIONAL BIOLOGY

The Department of Biological Sciences at Carnegie Mellon University seeks to fill a **TENURE-TRACK APPOINTMENT** at the intersection of computer science and biology. Successful candidates will have strong credentials in both areas, a Doctoral degree in computer science or a natural science, and be prepared to take advantage of Carnegie Mellon's world-class strength in computer science and strong tradition of interdisciplinary research. Applicants in all areas of computational biology will be considered. Send curriculum vitae, statement of research interests, and three letters of recommendation to: **Dr. Robert F. Murphy, Department of Biological Sciences, Carnegie Mellon University, 4400 Fifth Avenue, Pittsburgh, PA 15213**. Review of applications will begin on November 1, 2001, and continue until a suitable candidate is recruited. *Carnegie Mellon University is an Equal Opportunity/Affirmative Action Employer. Our Department is eager to diversify its faculty; we encourage women and minorities to apply.*

The Department of Pathology and the University of Illinois at Chicago Cancer Center invites applications for a tenure-track position in DNA repair at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level. Rank will be commensurate with experience and the candidates must have a Ph.D. or M.D., a minimum of two years of postdoctoral training, and evidence of the ability to sustain an extramurally funded research program. We are seeking an individual with strong research interests in DNA repair to complement existing faculty research in DNA damage; however, all outstanding candidates are encouraged to apply. Candidates should send curriculum vitae, summary of research interests, and a list of at least three individuals to contact as references to: **Robert Folberg, M.D., Professor and Head, Department of Pathology (MC847), University of Illinois at Chicago, 1819 West Polk Street (446 CMW), Chicago, IL 60612. E-mail: rfolberg@uic.edu**. *UIC is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

ASSISTANT PROFESSOR OF ECOSYSTEM ECOLOGY
School of Integrative Biology
University of Illinois at Urbana–Champaign

The School of Integrative Biology, University of Illinois at Urbana–Champaign, invites applications for a nine-month, tenure-track position at Assistant Professor of ecosystem ecology. The position starts in August 2002. We seek an individual with interests in factors that influence biogeochemical processes at the ecosystems, landscape, or global scale. A Ph.D. in a relevant field is required, and postdoctoral experience is preferred. The successful candidate will be expected to establish a creative, vigorous, and externally funded research program. Responsibilities include teaching at the undergraduate and graduate levels and participation in graduate training through the Program in Ecology and Evolutionary Biology (**website: http://www.life.uiuc.edu/peeb/**). The School provides a highly collaborative and supportive environment with opportunities to interact with faculty in other units on campus. Salary is commensurate with experience.

To ensure full consideration, applicants should submit curriculum vitae; statement of research and teaching interests; copies of three representative publications; and have three letters of reference sent no later than November 6, 2001. Please send materials to: **Ecosystem Search Committee, University of Illinois, School of Integrative Biology, 286 Morrill Hall, 505 South Goodwin Street, Urbana, IL 61801. Telephone: 217-333-3044; FAX: 217-244-1224; e-mail: sib@life.uiuc.edu; website: http://www.life.uiuc.edu/sib/.**

The University of Illinois is an Affirmative Action/Equal Opportunity Employer. Minorities, women, and other designated classes are encouraged to apply.

Behavioral neuroscience: The Department of Psychology at the University of Wisconsin–Milwaukee anticipates a tenure-track opening (pending budgetary approval) in behavioral neuroscience in the fall of 2002. The appointment would be at the **ASSISTANT PROFESSOR** level. Candidates should have a Ph.D., a strong background in neuroscience and experimental psychology, and significant postdoctoral research experience. Area of research specialization is open but outstanding individuals with interests that complement existing efforts focused on the neurobiology of memory using cellular or molecular approaches are particularly encouraged to apply. Responsibilities include developing a strong, extramurally funded research program and teaching graduate and undergraduate courses in behavioral neuroscience. To apply, send curriculum vitae; a statement of research interests; and three letters of recommendation before December 14, 2001, to: **Behavioral Neuroscience Search Committee, Department of Psychology, University of Wisconsin–Milwaukee, P.O. Box 413, Milwaukee, WI 53201**. *The University of Wisconsin–Milwaukee is an Equal Opportunity Institution committed to diversity.*

NEUROSCIENTIST IN PSYCHIATRY
ASSISTANT PROFESSOR LEVEL

The Department of Psychiatry and the Lieber Center for studies in schizophrenia at Columbia University, College of Physicians and Surgeons, and New York State Psychiatric Institute, seek a Neuroscientist for an appointment in psychiatry at the Assistant Professor Level. The eligible candidate should be a Ph.D., M.D., or M.D./Ph.D., involved in basic neuroscience work relevant to schizophrenia (pharmacology, molecular biology, or systems neuroscience). A strong record of publications and success in obtaining funding are essential. We are especially interested in faculty who will foster translational research to link basic and clinical research in the Lieber Center for studies in schizophrenia. Applicants should submit a letter describing research interests and plans, curriculum vitae, and names of three references to: **Marc Laruelle, M.D., Department of Psychiatry, Columbia University, 1051 Riverside Drive, NYSPI Unit 31, New York, NY 10032**. *Columbia University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

SWARTHMORE

ANIMAL BEHAVIOR

The Department of Biology at Swarthmore College invites applications for a tenure-track position in nonprimate animal behavior at the **ASSISTANT PROFESSOR** level beginning in September 2002. Applicants should have a Ph.D., teaching experience, and a strong commitment to undergraduate education. Postdoctoral research experience is desirable. We seek an experimentalist whose work emphasizes ecological and evolutionary questions, includes a strong field component, and encourages undergraduate participation. Teaching duties will include participation in a team-taught introductory biology course, a one-semester course in animal behavior with field component, and an advanced course/seminar with laboratory projects in the area of the applicant's interest. Persons who wish to apply for this position should submit curriculum vitae, three letters of recommendation, and a statement of teaching and research interests to: **Dr. John B. Jenkins, Chair, Department of Biology, Swarthmore College, Swarthmore, PA 19081**. All materials must be received by 2 November 2001. *Swarthmore College is an Equal Opportunity Employer.*

TWO TENURE-TRACK FACULTY POSITIONS
Department of Neuroscience
University of Pittsburgh

Applications are invited for two faculty positions starting September 2002, one as **ASSISTANT PROFESSOR** and the other as **ASSISTANT** or **ASSOCIATE PROFESSOR**, pending budgetary approval. This is a broadly defined search, and individuals working at any of multiple levels including behavioral, systems, cellular, and molecular neurobiology will be considered. Opportunities for collaborative research are widespread within the Department and the extensive neuroscience community, and a joint appointment in the Center for the Neural Basis of Cognition at the University of Pittsburgh and Carnegie Mellon University is possible for one or both positions. Additional information can be found on the Department's **website: http://www.pitt.edu/~neurosci**. Applicants should send curriculum vitae, a brief statement of research goals, and the names of three references to: **Faculty Search Committee, Department of Neuroscience, 446 Crawford Hall, University of Pittsburgh, Pittsburgh, PA 15260. E-mail: search@bns.pitt.edu**. Applications will be reviewed promptly and are invited until the positions are filled. *The University of Pittsburgh is an Affirmative Action/Equal Opportunity Employer. Women and members of minority groups underrepresented in academia are especially encouraged to apply.*

THE DEPARTMENT OF ECOLOGY AND EVOLUTIONARY BIOLOGY
University of California, Irvine

The Department is soliciting applications for a tenure-track position at the **ASSISTANT PROFESSOR** level in the area of ecology. Applicants with research specialization within any area of ecology are welcomed. The successful candidate will be expected to teach undergraduate and graduate courses in ecology. Additional information can be obtained from **Search Committee Chair George Hunt** at **e-mail: glhunt@uci.edu**.

Further information about the Department can be obtained at **website: http://ecoevo.bio.uci.edu/**. By November 1, 2001, please submit curriculum vitae; a description of research interests and teaching interests; relevant publications; and arrange to have three letters of recommendation sent to: **Ecology Search Committee, Department of Ecology and Evolutionary Biology, 321 Steinhaus Hall, University of California, Irvine, CA 92697-2525**.

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

POSITIONS OPEN

DIRECTOR/NINE FACULTY
Center for Bioinformatics and Computational Biology
University of Maryland, College Park

The University of Maryland invites **FACULTY** applications at all levels for the newly established Center for Bioinformatics and Computational Biology. The campus has committed substantial resources to the Center including funds for the recruitment of nine new faculty including a Director. It is anticipated that the primary specialization areas of the new faculty will collectively span the fields of computer science, mathematics and statistics, molecular biology, molecular evolution/phylogeny, and biochemistry. The primary responsibility of the new faculty will be to lead a nationally visible research program in selected areas of computational genomics, proteomics, and molecular evolution, complementing existing strengths at the University of Maryland. Candidates for the Director position are expected to be senior Researchers with prominent recognition in these areas. All the new faculty will be housed in contiguous space set aside for the Center and will have access to significant high-end computing infrastructure through the University of Maryland Institute for Advanced Computer Studies. Each will also be affiliated with at least one other campus academic unit appropriate to her/his interests. There is ample potential for collaboration with other outstanding bioinformatics research groups nearby in organizations such as NIH, Celera, TIGR, the Maryland Biotechnology Institute, and the Smithsonian Institution. To apply, send a letter of application, curriculum vitae, and URL for additional information to **e-mail: cecilia@umiacs.umd.edu** and have at least three letters of recommendation sent to:

Cecilia Kullman
Center for Bioinformatics and Computational Biology
Institute for Advanced Computer Studies
2131 A.V. Williams Building
University of Maryland
College Park, MD 20742
Website:
http://www.umiacs.umd.edu/centers/bio.htm

Applications will be accepted until the positions are filled.

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

FACULTY POSITION
Cellular/Molecular Neurobiology

The Department of Biological Sciences at Vanderbilt University seeks candidates to fill a rank-open, tenure-track or tenured faculty position in cellular/molecular neurobiology. We are especially interested in candidates who would complement existing strengths in the Department and in the Vanderbilt Center for Molecular Neuroscience. The central criteria for this position are excellence in research and the ability to teach undergraduate and graduate students with a high level of effectiveness. For information about the Department and about the growing neuroscience community at Vanderbilt, visit our **websites: http://www.biosci.vanderbilt.edu** and **http://www.vanderbilt.edu/neuroscience**. Applicants should send a letter of application together with curriculum vitae, a statement of current and future research interests, and selected reprints to: **Neurobiology Search Committee, Department of Biological Sciences, Vanderbilt University, VU Station B 351634, Nashville, TN 37235-1634 U.S.A.** Junior faculty applicants should also arrange for three letters of recommendation to be sent to the same address. Senior faculty applicants should provide a list of at least six references that would be willing to provide letters on request. Review of applications will begin October 29, 2001, and will continue until the position has been filled. *Vanderbilt University is an Affirmative Action/Equal Opportunity Employer. Women and minority candidates are especially encouraged to apply.*

Faculty Position
Structural and/or Computational Biology
MIT, Department of Biology

MIT is seeking an outstanding scientist with a strong record of research accomplishment for a tenure track position. Applicants at all faculty levels will be considered. A successful applicant will be expected to have or develop a significant and independent research program and have a commitment to excellence in undergraduate and graduate education.

The applicant's research program may involve any area of modern structural and/or computational biology.

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

Structural and Computational Search Committee
Attn: Robert Sauer
MIT, 77 Massachusetts Avenue
Room 68-132
Cambridge, MA 02139

Consideration of completed applications will begin on November 1, 2001.

MIT is an Affirmative Action/Equal Opportunity employer. Qualified women and minority candidates are especially encouraged to apply.

mayo

MAYO CLINIC POSTDOCTORAL FELLOWSHIP

Positions are available to investigate the interrelationship between TGF-B receptor signaling and endocytic activity in mesenchymal and epithelial cell models. Specific projects will characterize the subcellular location, role of the endocytic machinery, cisacting receptor elements, and cytoskeleton in TGF-B receptor trafficking and proliferative control.

Positions are available immediately. If interested, please send curriculum vitae and names of three references to:

Edward Leof, PhD
Mayo Clinic
Stabile 858
200 1st. St SW
Rochester, MN 55905
Phone: 507/284-5717
Fax: 507/284-4521
E-mail: leof.edward@mayo.edu
see also: http://www.mayo.edu/research/

Mayo Foundation is an affirmative action and equal opportunity employer and educator.

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At **Wyeth,** we work with purpose because our work has purpose: We work for lives. We have a long history of pioneering preventive and therapeutic pharmaceutical, vaccine, and nutritional product solutions. Our R&D accomplishments in women's health care, anti-inflammatory agents, central nervous system drugs, oncology/immunology, infectious disease and more put us at the forefront of health care's most promising discoveries. With a product pipeline ranked among the industry's best, the future is exhilarating.

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- Process development and initial production capabilities required to meet product development and clinical supply requirements
- PhD in Biochemical or Chemical Engineering with research and development experience related to the development and scale-up of bioprocesses with 8 or more years of fermentation process development experience

Engineer
- Assist in the development and scale-up of bioprocesses used in the pilot scale production of new drug candidates
- BS in Chemical Engineering

Research Scientist, Microbiology
- Will be involved with the genetic manipulation of secondary metabolite pathways in Actinomycetes to produce novel compounds
- BS in Chemistry, Microbiology or Biochemistry with 7 years of experience; or MS in Chemistry, Microbiology, or Biochemistry with 5 years of experience

Research Scientist, Microbiology
- Develop enzyme catalyzed and whole cell biotransformations for the production of novel chemical intermediates
- BS in Chemistry, Microbiology or Biochemistry with 7 years of experience; or MS in Chemistry, Microbiology or Biochemistry with 5 years of experience

Sr. Research Scientist
- Work with synthetic organic chemists to identify possible targets that can be accessed by biocatalysis
- PhD in Microbiology, Biochemistry, or Chemistry with 5 years relevant experience in microbial physiology, enzymology or organic chemistry

Research Scientist, Chemistry
- Develop HPLC analytical methods for the analysis of fermentation products, extract and isolate natural products from fermentations by solvent partition, solid phase extraction, silica flash chromatography, and preventive HPLC
- BS in Chemistry, Microbiology or Biochemistry with 7 years experience; or MS in Chemistry, Microbiology or Biochemistry with 5 years of experience

Research Scientist, Chemistry
- Develop new protein-conjugates to support both preclinical and clinical studies
- BS in Chemistry, Microbiology or Biochemistry with 7 years experience; or MS in Chemistry, Microbiology or Biochemistry with 5 years of experience

The collective skills of 40,000 of the world's top talent keep us on the cutting edge. We care for our people by offering rich avenues for advancement, challenging opportunities, generous compensation, stock options, childcare subsidies, education assistance, flexible schedules and other great benefits. For consideration, please forward your resume and salary requirements to: **Wyeth Ayerst, Attn: CPB, 401 N. Middletown Road, Pearl River, NY 10965. Fax: 845-732-5375. E-mail: prwajo@labs.wyeth.com** No phone calls. Principals only. Equal Opportunity Employer M/F/D/V

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FACULTY POSITION IN ECOLOGY

The Vancouver Campus of Washington State University invites applications for a tenure-track **ASSISTANT PROFESSOR** position in ecology. We seek applicants with strong conceptual and experimental emphases in any area of ecology. We are especially interested in those with specializations in conservation or ecosystem ecology with interests in Pacific Northwest systems and who complement any research interests of current Vancouver science faculty. The successful candidate will develop a vigorous, externally funded research program and teach graduate and upper-division undergraduate courses in biology and environmental science. A Ph.D. is required by the start date. Strong publications and potential for external funding and excellence in teaching are expected. Faculty at the Vancouver campus are appointed in the School of Biological Sciences on the Pullman campus. See **website: http://www.sci.wsu.edu/sbs/** for more information.

WSU Vancouver offers both undergraduate and graduate programs and is expected to double its student body (currently 1,600) and faculty in the next five years with science and engineering as areas of emphasis. Research expectations and teaching loads are consistent across the four WSU campuses; WSU, a Tier I research institution, offers competitive salaries and start-up packages. WSU Vancouver is located across the Columbia River from Portland, Oregon, and offers significant opportunities for research, a variety of neighbor institutions and agencies for collaboration, and excellent quality of life. **Website: http://www.vancouver.wsu.edu/programs/sci/.**

Send two copies of the following items: curriculum vitae, up to three reprints, cover letter summarizing research and teaching interests, and three letters of reference to: **Dr. Sally Hacker, Washington State University Vancouver, 14204 N.E. Salmon Creek Avenue, Vancouver, WA 98686-9600. E-mail: hacker@vancouver.wsu.edu; Telephone: 360-546-9630; FAX: 360-546-9064.** Applications should be postmarked by November 30, 2001.

Washington State University is an Equal Opportunity/Affirmative Action Educator and Employer.

MOLECULAR/CELLULAR NEUROSCIENCE
BIOLOGY DEPARTMENT
Williams College

Tenure-track position at the rank of **ASSISTANT PROFESSOR** beginning July 1, 2002, with teaching responsibilities in the areas of molecular and cellular biology and neuroscience. Normally, faculty members teach one course and two laboratories or the equivalent each semester. A research program that attracts extramural funding and involves undergraduates is expected. Ph.D., postdoctoral experience, and a strong research record are required. Please send curriculum vitae; one-page statements of teaching and research interests; and three letters of recommendation by November 15, 2001, to: **Heather Williams, Chair, Department of Biology, Williams College, Williamstown, MA 01267.**

An Equal Opportunity/Affirmative Action Employer, Williams College especially welcomes applications from women and minority candidates.

The Department of Anatomy and Cell Biology invites applications for an **ASSISTANT PROFESSOR.** Applicant should have a Ph.D., M.D., or equivalent degree with prior teaching experience in medical gross anatomy and demonstrated ability to conduct independent research. The successful applicant will be expected to participate in medical and graduate education and will be encouraged to pursue independent research. Curriculum vitae, a brief description of previous and anticipated research, and the names of three references should be sent to: **M.A.Q. Siddiqui, Ph.D., Professor and Chair, Department of Anatomy and Cell Biology, SUNY Health Science Center at Brooklyn, 450 Clarkson Avenue, Box 5, Brooklyn, NY 11203. FAX: 718-270-3732.** *The State University of New York is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

The Department of Genetics and the Department of Medicine, Division of Gastroenterology, in the School of Medicine of the University of Pennsylvania are jointly recruiting at the level of **ASSISTANT PROFESSOR** (tenure track). Applicants must have a Ph.D., M.D., or M.D./Ph.D. and evidence of a productive postdoctoral research experience in human genetics/cancer genetics. Applicants should send a statement of research interests, curriculum vitae, and names of three references to one of the following:

Anil K. Rustgi, M.D.
University of Pennsylvania
Gastroenterology Division
415 Curie Boulevard
600 CRB/6140
Philadelphia, PA 19104-6140

Haig H. Kazazian, M.D.
University of Pennsylvania
Department of Genetics
415 Curie Boulevard
475 CRB/6145
Philadelphia, PA 19104-6140

TENURE-TRACK ASSISTANT PROFESSOR
Experimental Field Ecology/ Conservation Biology

The Department of Zoology, University of British Columbia, seeks an Experimental Field Ecologist with interests in conservation biology. The successful applicant will be expected to teach courses in conservation biology, ecology, or organismal biology and to be active in the UBC Centre for Biodiversity Research.

Expected starting date: July 1, 2002. Salary will be commensurate with experience. Appointment will be at the Assistant Professor level and is subject to final budgetary approval.

Applicants should send curriculum vitae, a summary of research interests and teaching philosophy, reprints of three key publications, and the names and e-mail addresses of three references to: **Dr. J. Gosline, Acting Head, Department of Zoology, University of British Columbia, 6270 University Boulevard, Vancouver, BC V6T 1Z4 Canada. E-mail: head@zoology.ubc.ca; FAX: 604-822-5780.** Candidates should ask references to send supporting letters to the same address by the closing date. Closing date for applications is October 31, 2001.

In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. The University of British Columbia hires on the basis of merit and is committed to Employment Equity. We encourage all qualified persons to apply.

PLANT ECOLOGIST. Birmingham-Southern College, a national undergraduate liberal arts college, invites applications for a tenure-track **ASSISTANT PROFESSOR** position to begin fall 2002. Successful candidate will demonstrate teaching excellence and develop an active research program involving undergraduates. Ph.D. required; postdoctoral experience preferred. Primary teaching responsibilities include participation in introductory biology courses sequence, ecology, and upper-level courses in area of expertise. Opportunity is available to participate in the College's Environmental Studies program. Start-up funds available. In 2002, Natural Sciences will occupy the new Elton B. Stephens Science Center. For further information, see **website: http://panther.bsc.edu/~lpezzeme/biology_html/plant.html.** Review of applications will begin 15 December 2001. Submit letter of application, curriculum vitae, undergraduate and graduate transcripts, statements of teaching philosophy and of research interests, recent publications, and three letters of recommendation to: **Dr. Clyde Stanton, Chair, Division of Science and Mathematics, Box 549022, Birmingham-Southern College, Birmingham, AL 35254.** No e-mail applications. *BSC complies with Alabama Child Protection Act. Equal Opportunity Employer.*

POSITIONS OPEN

FISHERIES BIOLOGIST/HYDROLOGIC MODELER

The Robert B. Annis Water Resources Institute at Grand Valley State University is seeking a Fisheries Biologist and a Hydrologic Modeler to complement the research of other Investigators at the Institute, which focuses on sediment toxicity, environmental chemistry, watershed ecology and management, land use, GIS, and Great Lakes ecology. The selected candidates must have Ph.D.; demonstrated research capabilities; and will be expected to develop and maintain a vigorous, extramurally funded research program; publish findings in the peer-reviewed scientific literature; work in a collaborative, interdisciplinary environment; and have excellent written and verbal communication skills. The Fisheries Biologist should have knowledge and expertise in one or more of the following areas: ecophysiology, toxicology and contaminants, molecular biology, or trophic-level interactions. The Hydrologic Modeler should have knowledge and expertise in the modeling of surface and subsurface hydrology and will be expected to work collaboratively with Scientists at the Institute on the modeling of watershed-related projects. Opportunities also exist for participating in undergraduate and graduate teaching.

Applicants should send curriculum vitae including the names and contact information of three references to: **Dr. Alan Steinman, Director, AWRI, Lake Michigan Center, 740 West Shoreline Drive, Muskegon, MI 49441. E-mail: steinmaa@gvsu.edu.** Further information about AWRI can be found at **website: http://www.gvsu.edu/wri.** Initial reviews of applications will begin November 1, 2001, and continue until the positions are filled. *Grand Valley State University is an Affirmative Action/Equal Opportunity Employer.*

YALE UNIVERSITY
SCHOOL OF MEDICINE
Department of Genetics
Center for Human Genetics

The Yale University Medical School Department of Genetics and the newly established Yale Center for Human Genetics are seeking outstanding candidates to fill a tenure-track position at the **ASSISTANT PROFESSOR** level. The successful applicant will be provided generous start-up funds and will establish a strong, independent research program broadly relevant to mammalian genetics. Approaches employing human and model systems are encouraged. Applications should include curriculum vitae, a statement of research plans, and three letters of recommendation. Application materials should be sent to:

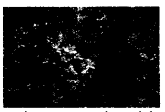
Richard P. Lifton
Chairman
Department of Genetics
Yale University School of Medicine
P.O. Box 208005
New Haven, CT 06520-8005

An Equal Opportunity/Affirmative Action Employer. We strongly encourage applications from women and minority candidates.

PLANT PHYSIOLOGY: Ithaca College seeks applicants for tenure-track **ASSISTANT PROFESSOR** position in plant physiology starting August 2002. Candidate expected to develop active research program with undergraduates, teach plant physiology, develop an upper-level course in his/her area of specialization, and contribute to introductory biology and nonscience majors courses. Prior teaching experience desirable. More information at **website: http://www.ithaca.edu/biology.** Send curriculum vitae, statements of teaching experience/philosophy, research interests, and three letters of recommendation to: **Chair, Search Committee, Biology Department, Ithaca College, Ithaca, NY 14850-7278.** Screening of applications will begin November 1, 2001; however, the position will remain open until filled. *Ithaca College is an Equal Opportunity/Affirmative Action Employer. Members of underrepresented groups (including people of color, persons with disabilities, Vietnam veterans, and women) are encouraged to apply.*

Virginia Bioinformatics Institute

Join a cutting edge research team...



The Virginia Bioinformatics Institute (VBI) at Virginia Polytechnic Institute and State University seeks highly motivated scientists for our growing interdisciplinary research team. We seek individuals who can work collaboratively to solve complex biological problems with a demonstrated ability to successfully compete for major sources of research funding.

VBI is recruiting faculty at all levels for research track positions with very competitive compensation packages. Tenure track appointments may be offered for exceptionally qualified candidates, in liaison with appropriate academic departments of the university.

We seek candidates with the following qualifications: Research focus in bioinformatics, computational biology, genomics, functional genomics, or proteomics; and background in the life sciences, physical sciences, computer science, engineering, statistics or mathematics.

Virginia Tech is a top 50 research university with strengths in engineering, information technology, and biotechnology. Our proximity to Washington, DC and federal agencies is a major advantage, as is the university's liberal intellectual properties policy (50% royalties to inventor).

Send application materials to:

Please send a CV accompanied by a statement of your research and career plans to Virginia Bioinformatics Institute - Human Resources: hr@vbi.vt.edu. Electronic Documents in Adobe PDF or Microsoft RTF format are preferred.

VBI Virginia Tech
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Virginia Tech has a strong commitment to the principal of diversity and, in that spirit, seeks a broad spectrum of candidates including women, minorities, and people with disabilities. Individuals with disabilities desiring accommodations in the application process should notify Human Resources, Virginia Bioinformatics Institute, (540) 231-2100 or call the Virginia Telecommunications Relay Service at (800) 828-1120.

NEUROSCIENTISTS

Virginia Commonwealth University
Campus of the Medical College of Virginia

The Department of Anatomy at Virginia Commonwealth University School of Medicine invites applications for one tenure track Assistant/Associate Professor position and one collateral Assistant Professor position, with potential conversion to tenure-track status in two years. We seek exceptional candidates pursuing imaginative cellular, molecular or systems approaches in areas related to the Department's research strengths: neural development and plasticity, neural injury and repair, sensory systems, motor systems and the neuromuscular junction. Please visit our web site http://views.vcu.edu/ana for more detailed information regarding departmental areas of research.

The successful candidates must have a Ph.D., M.D. or D.D.S., and two or more years of productive postdoctoral research experience. Candidates for Associate professor must have an outstanding record of research accomplishments, an independent research program, and active extramural funding. Candidates for Assistant Professor must have the potential to establish an independent, nationally funded research program. The candidates are expected to participate in teaching activities in the Department of Anatomy. Attractive salary and start-up packages commensurate with the candidate's qualifications and experience are available for each of these positions.

Candidates should submit a letter of application specifying the position/s of interest, curriculum vitae, brief summary of current research, statement of future research directions, and the names, addresses, telephone numbers and e-mail addresses of three references. Send materials to:

Chair, Faculty Search Committee
Department of Anatomy, P.O. Box 980709
Virginia Commonwealth University
School of Medicine
Richmond, Virginia 23298-0709

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

NIMH National Institute of Mental Health

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

The National Institutes of Health, National Institute of Mental Health, is seeking a talented scientist to advance and direct the extramural grant support of basic research in emotion, motivation, and mood. The position of **Chief, Emotional Processes Program (GS-13/14, $63,211 - $99,391** (salary includes special pay for Medical Officers; salary range will change after the 2002 pay adjustment), is located in the Behavioral Science Research Branch, Division of Neuroscience and Basic Behavioral Science, NIMH. The position offers broad exposure to current issues related to the study of emotion and scientific engagement with the research community. Qualifications include a doctorate in a relevant behavioral science discipline as well as appropriate research experience. In addition to knowledge of emotional processes from behavioral and psychosocial perspectives, familiarity with psychobiological and neural approaches is an asset. The full range of Federal fringe benefits/vacation and sick leave is included. Interested candidates should contact: Ms. Malca Giblin, Personnel Management Branch, NIMH, 301-443-9094.

A copy of the full text vacancy announcement is available via the World Wide Web: http://www.nimh.nih.gov/orm/pmb/nimhjobs.cfm. Please refer to announcement number **NIMH-01-00118.** Applications must be post-marked by the closing date of November 30, 2001 and received within five business days of the closing date.

Equal Opportunity Employer. U.S. Citizenship is required.

TENURE TRACK FACULTY POSITIONS

Anticancer Drug Pharmacology, Preclinical Drug Development & Mouse Models for Cancer Prevention and Therapy

Grace Cancer Drug Center
Roswell Park Cancer Institute, Buffalo, NY

The Department of Pharmacology and Therapeutics at Roswell Park Cancer Institute seeks to fill two faculty positions at the level of Assistant Member in the areas of mechanisms of anticancer drug action, selectivity or resistance; preclinical cancer drug development with emphasis on drug combinations and/or identification of determinants of *in vivo* drug action; mouse models for developing or evaluating prevention or treatment strategies. The Grace Cancer Drug Center provides a rich multidisciplinary environment and the opportunity to interact with basic research scientists, anticancer pharmacologists and oncologists. Competitive salaries and start-up packages will be provided. Interested candidates should send a CV, names of 3 references, and a summary of research interests to: **GCDC Faculty Search, c/o Dr. Carl W. Porter, Grace Cancer Drug Center, Elm and Carlton Streets, Buffalo, NY 14263. Electronic inquiries will be received at cheryl.melancon@roswellpark.org**

ROSWELL PARK CANCER INSTITUTE
PATIENT CARE • RESEARCH • EDUCATION
Elm & Carlton Streets
Buffalo, New York 14263
http://www.roswellpark.org
1-800-ROSWELL

Roswell Park Cancer Institute is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

TENURE-TRACK FACULTY POSITIONS MOLECULAR AND CELLULAR BIOLOGY
Eastern Virginia Medical School

The Department of Microbiology and Molecular Cell Biology invites applications for a tenure-track faculty position at the level of **ASSISTANT** or **ASSOCIATE PROFESSOR**. We are particularly interested in individuals whose research focus will complement our existing interdisciplinary research strengths in the areas of cancer biology and viral molecular pathogenesis. Recruitment efforts will target individuals whose research utilizes genomic, proteomic, and molecular biological approaches to addressing questions that relate to molecular mechanisms of pathogenesis. Successful candidates are expected to develop and maintain a productive, extramurally funded research program and to participate in medical and graduate student teaching. Excellent laboratory facilities, competitive salaries, and attractive start-up packages are available. Interested individuals should send their curriculum vitae; a brief statement of major academic/research accomplishments; and the names, addresses, and telephone numbers of three references to: **Dr. John Semmes, Department of Microbiology and Molecular Cell Biology, Eastern Virginia Medical School, P.O. Box 1980, Norfolk, VA 23501. E-mail: semmesoj@evms.edu; website: http://www.evms.edu/micro/index.html**. Review of applicants will commence immediately. *EVMS is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT/ASSOCIATE PROFESSORSHIP PHARMACEUTICS

The Department of Pharmaceutical Sciences invites applications for a tenure-track faculty position in pharmaceutics. Applicants should have a Ph.D., postdoctoral experience, and research interests in drug delivery, biopharmaceutics, or pharmacokinetics. The Department of Pharmaceutical Sciences is under new leadership and is undergoing dramatic growth with the addition of seven faculty members over the next several years. Excellent opportunities exist for collaborations across campus and in the Hollings Cancer Center, Neuroscience Institute, and Gazes Cardiac Research Institute. We offer excellent salaries and benefits, start-up package, and renovated laboratory space. The successful applicant is expected to develop an independent research program and participate in graduate and professional teaching. Applications will be reviewed beginning November 15, 2001, and will continue until the position is filled. Applicants should submit curriculum vitae, statement of research interests, and contact information for four references to: **Ms. Sandy Spence, Department of Pharmaceutical Sciences, Medical University of South Carolina, 280 Calhoun Street, P.O. Box 250140, Charleston, SC 29425. Telephone: 843-792-3117; e-mail: spencesj@musc.edu**.

RESEARCH ASSOCIATE
Toxicology

Applications are invited for a position of Research Associate in the Department of Biological Sciences at Alcorn State University (ASU) located near historic Natchez and Vicksburg, Mississippi. This position is for period of three years or until March 31, 2005. Responsibilities include research activities in areas of heavy metal toxicity in brain including second messenger system; signal transduction; isoforms of PKC, NOS, and NMDA; and reactive oxygen species. Should be able to initiate and complete research independently. Competitive salary with good fringe benefits.

The successful candidate will have a Ph.D. in appropriate area with demonstrated expertise in research in areas listed above. Interested applicants should send curriculum vitae and the names and addresses of three references to: **Bettaiya Rajanna, Ph.D., Department of Biological Sciences, Alcorn State University, 1000 ASU Drive, P.O. Box 870, Alcorn State, MS 39096. E-mail: brajanna@lorman.alcorn.edu; FAX: 601-638-3989**. *Alcorn State University is an Equal Opportunity Employer committed to the development of a diverse workforce.*

FACULTY POSITION BIOCHEMISTRY/STRUCTURAL BIOLOGY

Montana State University invites applicants for a tenure-track position in structural biology. Required: Doctoral degree in a related discipline; experience elucidating complex macromolecular structures using one or more of the following approaches: X-ray crystallography, NMR, EPR, mass spectrometry, or computational methods; the ability to establish a nationally competitive research program; and promise of excellence in teaching biochemistry/structural biology. MSU is well equipped with advanced instrumentation in these areas and will augment instrumentation as needed. Appointment anticipated at **ASSISTANT PROFESSOR** level but exceptional candidates at higher levels will be considered. See **website: http://www.montana.edu/level2/jobs.html** for complete position description. Review of applications will begin on October 22, 2001. Submit letter of application addressing issues in the position description, curriculum vitae, brief (three- to-five-page) descriptions of research plans, statement of teaching interests, and arrange for three letters of reference to be sent to: **Edward A. Dratz, Chair, Structural Biology Search Committee, Department of Chemistry and Biochemistry, Montana State University, Bozeman, MT 59717.** *Americans With Disabilities Act/Equal Opportunity/Affirmative Action/Veterans Preference.*

PLANT PHYSIOLOGY UNIVERSITY OF NEW MEXICO

The Biology Department at the University of New Mexico seeks applicants for a full-time, tenure-track position at the **ASSISTANT PROFESSOR** level in any area of plant physiology. Applicants must have a Ph.D. in biology or a related discipline at the time of appointment and broad training in plant biology. We seek an outstanding individual who complements the activities of the Scientists in the Department. The Department is broad, including all levels of biology. The individual hired will be expected to develop a strong, independent research program and be committed to excellent teaching in the undergraduate through graduate level including a comprehensive plant physiology course. Additional information is available at **website: http://biology.unm.edu/**. Applicants should send a signed letter, curriculum vitae, at least three letters of reference, statements of research and teaching interests and experience, and recent reprints to: **Plant Physiology Search Committee, Department of Biology, University of New Mexico, Albuquerque, NM 87131 U.S.A. FAX: 505-277-0304; Telephone: 505-277-9740**. Deadline for receipt of application materials is November 28, 2001.

UNM is an Equal Opportunity/Affirmative Action Employer and Educator. Members of underrepresented groups are encouraged to apply.

THE UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER
The Endowment for Scholars in Biomedical Research

UT Southwestern is pleased to announce the continuation of the Endowed Program for Scholars in Biomedical Research. The Program, which is fully funded from private endowment, will provide $600,000 over four years to support the research activities of each new **ASSISTANT PROFESSOR** (tenure track) appointed to the Program; five will be appointed annually. In addition, regular funding for salary as well as research space will be provided by the medical school department or research center offering the appointment. Positions in both basic science and clinical departments are available. The goal of the program is to assure a successful beginning of the research careers of an ever-growing cadre of outstanding young Investigators at UT Southwestern.

For detailed information about currently available faculty positions, please access our **website: http://www.utsouthwestern.edu/home_pages/scholars/. Southwestern, The University of Texas Southwestern Medical Center at Dallas.**

UT Southwestern is an Equal Opportunity Institution.

ASSISTANT/ASSOCIATE PROFESSOR
Structural Biology
X-Ray Crystallography

The School of Biological Sciences, University of Missouri–Kansas City, is expanding its structural biology program and seeking applicants with expertise in X-ray crystallography for a tenure-track faculty position. Structural biology is one area designated by the school for continued expansion in faculty and facilities. Current facilities include electrospray and MALDI-TOF MS, electron and confocal microscopy, NMR, gene microarray, high-throughput DNA sequencing, CD, fluorescence, FTIR, and Raman spectroscopy. The School possesses an excellent macromolecular X-ray crystallography facility and is a member of SER-CAT, which is building two beamlines at APS. The new faculty member will be expected to maintain a nationally recognized research program in any area of structural biology and teach at both the undergraduate and graduate levels. Generous start-up funds are avaiable. Submit curriculum vitae and summary of present and future research and request three letters of recommendation be forwarded to: **Dr. Marilyn D. Yoder, Chair, Structural Biology Search Committee, BSB 114, School of Biological Sciences, University of Missouri–Kansas City, 5100 Rockhill Road, Kansas City, MO 64110-2499**.

Equal Opportunity/Affirmative Action Employer.

BIOCHEMISTRY
University of South Carolina

The Department of Chemistry and Biochemistry invites applications for a tenure-track position at the **ASSISTANT PROFESSOR** level, although especially well-qualified applicants for a more advanced position will also be considered. While we are particularly interested in candidates in the areas of physical or structural biochemistry or in candidates who would support current growth of the Department in the areas of materials science and nanoscience, outstanding candidates in all areas of biochemistry will be considered. The candidate will have a strong commitment to teaching chemistry and biochemistry at the undergraduate and graduate levels and will establish a vigorous, externally supported research program. Review of applications will begin as they are received and continue until the position is filled. Applicants should submit a letter of application, curriculum vitae, three letters of recommendation, and a statement of teaching interests and research plans to: **Dr. W. Stephen Kistler, Chair, Biochemistry Search Committee, Department of Chemistry and Biochemistry, University of South Carolina, Columbia, SC 29208**. Departmental information is available at **website: http://www.chem.sc.edu**. *The University of South Carolina is an Equal Opportunity/Affirmative Action Employer.*

PLANT MOLECULAR EVOLUTION/SYSTEMATICS

The Department of Biological Sciences, Texas Tech University, invites applications for a Plant Molecular Evolution/Systematics position at the rank of **ASSISTANT PROFESSOR** to begin September 2002. The successful candidate will be expected to establish an active, extramurally funded research program in plant evolution at the molecular level in natural populations, model species, or domesticated plants. Research topics can range from the evolution of genomes to specific physiological or developmental processes and should involve students at both the graduate and undergraduate levels. A Ph.D. in biology, botany, or a related field and postdoctoral experience are required. Teaching responsibilities could include plant taxonomy and an advanced specialty course. Applicants should submit current curriculum vitae; letter of intent; and statements of research and teaching interests and have three letters of reference sent to: **Carleton J. Phillips, Chair, Department of Biological Sciences, Texas Tech University, Lubbock, TX 79409-3131** by November 1, 2001. Visit our **website: http://www.biol.ttu.edu**. *Women and members of underrepresented groups are encouraged to apply.*

Tenure Track Faculty Positions
Program in Cell Signaling
Institute of Molecular Medicine and Genetics
Medical College of Georgia

The Medical College of Georgia seeks two outstanding investigators at the ASSISTANT, ASSOCIATE OR FULL PROFESSOR level in the area of cell signaling. Preference will be given to entry-level candidates, who have a Ph.D. or M.D. degree and a minimum of two years of postdoctoral experience, although exceptional applications from established investigators will also be considered. The Cell Signaling Program currently supports research in the areas of vesicle trafficking, cytoskeletal dynamics, G-protein signaling, protein phosphorylation, and lipid and ion second messengers. We are particularly interested in candidates that will complement these strengths. The Medical College of Georgia has established extensive, state-of-the-art core facilities including a Cell Imaging Core with confocal and multiphoton microscopes, a Molecular Biology Core with nucleic acid and peptide sequencing and synthesis, microarray, proteomic and mass spectrometry analysis, and Transgenic Cores for the generation and maintenance of transgenic mice and zebrafish. This recruitment is part of a statewide cancer initiative that seeks to attract more than 150 new investigators to Georgia over the next 5 years. Generous, highly competitive start-up packages are available. The Medical College of Georgia is a growing state-supported academic medical center located in Georgia's second largest metropolitan area with outstanding recreational and lifestyle opportunities. Interested applicants should forward a curriculum vitae and brief description of research program along with a list of three appropriate references to: **Paul L. McNeil, Medical College of Georgia, IMMAG, CB-2803, Augusta, GA, 30912.** Further information: pmcneil@mail.mcg.edu. ACH#43181&43812. P.O. E02169760.

EEO/AA/Equal Access employer.

Molecular Biologist in DNA Repair and Signal Transduction

The Departments of Radiation Oncology (www.radonc.rdo.vcu.edu), Biochemistry & Molecular Biophysics, and the Massey Cancer Center at the Medical College of Virginia, Virginia Commonwealth University, invite outstanding applications for a tenure-track faculty position as Assistant/Associate Professor. The successful applicant, with a Ph.D. and/or M.D. degree and several years of post-doctoral experience, is expected to develop an independent and extramurally funded research program, to develop research collaborations with other members of the program and to teach post-docs, medical residents, and graduate students. The successful applicant is expected to complement a highly interactive, multi-disciplinary program that investigates the molecular mechanisms of signal transduction, cell proliferation and apoptosis underlying tumor radioresistance, and applies novel approaches to radiation treatment using drugs and gene therapeutic tools. Applicants with interests in DNA repair, signal transduction, and cellular redox effects are particularly encouraged to apply.

Applications should include a CV, reprints of publications, a statement of research plans, and three letters of recommendation. This material should be sent to: **Paul Dent, Ph.D., Chair, Search Committee, Department of Radiation Oncology, Medical College of Virginia, Virginia Commonwealth University, Richmond, VA 23298-0058.**

VCU is an Equal Opportunity/Affirmative Action Employer.

Global Opportunities

SULTAN QABOOS UNIVERSITY
COLLEGE OF AGRICULTURE
Head – Dept. of Marine Science and Fisheries

Sultan Qaboos University, the national University of the Sultanate of Oman, seeks an experienced fisheries biologist to lead the Department of Marine Science and Fisheries into the new millennium. The new Head will be expected to collaborate closely with the Department's new UNESCO Chair in Seafood Biotechnology, as well as with the Director of the University's new Remote Sensing and GIS Center. Applicants must hold a Ph.D. degree in fisheries or closely related field, and possess practical experience in fish stock assessment preferably in tropical setting. Superb facilities, coupled with Oman's spectacular marine environment, make this a prestigious position with considerable potential. We are looking for an experienced individual with vision, a strong research record, experience in graduate supervision, a commitment to participative, collegial management and an ability to enrich the Department's strength in marine resource management. The Department possesses a newly purchased research and training vessel as well as aquaculture facilities.

The University is located near the capital area and close to excellent international schools and unique recreational areas. Apart from a very attractive tax free base salary, Sultan Qaboos University offers free furnished accommodation, excellent recreational facilities on campus, subsidized schooling for up to two children, 60 days annual leave with return air tickets, end of service gratuity and free medical treatment in Government Hospitals in the Sultanate.

Enquiries can be addressed to the Dean of the College of Agriculture, Prof. Mattheus F.A. Goosen, at theog@squ.edu.om. Applications should include a statement of interest, a detailed curriculum vitae, names and addresses of three referees and reprints of the applicant's three most important scientific contributions in the field of fisheries biology. The position will remain open until filled, but applications received before December 31st will be given highest priority. The University reserves the right not to make an appointment.

Please send applications, quoting our Ref: ADV/AGRI/06/2001, to :

The Director, Personnel Affairs,
Sultan Qaboos University,
P.O.Box 50, Postal Code 123,
Al-Khod, Sultanate of Oman
Fax: (00968) 513255
Email: nair@squ.edu.om

ASSOCIATE PROFESSOR OR SENIOR ASSISTANT PROFESSOR ENVIRONMENTAL SCIENTIST
University of Oregon

The University of Oregon Environmental Studies Program is seeking an exceptional scholar in environmental science with leadership abilities and proven research record to help shape the newly established degree program in environmental science. Desired start date: fall 2002. Tenure-related Associate Professor; Assistant Professor rank possible for outstanding candidates with somewhat less experience.

Applicants from any relevant environmental science discipline will be considered with preference for candidates using interdisciplinary approaches to study fundamental problems in the areas of conservation biology, global change, geochemistry, biogeochemistry, applied ecology, or Earth systems science.

Duties will be split between environmental studies and the appropriate academic department (e.g., Biology, Geography, or Geological Sciences) and will include (1) developing an academically oriented, externally funded research program; (2) teaching undergraduate interdisciplinary courses in the Environmental Studies program and advanced courses in areas of specialization; and (3) supervising Master's and Doctoral students. Applicants must have a commitment to interdisciplinary approaches to research and teaching and an interest in involvement in a program that encompasses humanities, social science, science, and several professional programs.

Candidates should send letter of application, statements of research interests and teaching philosophy, current curriculum vitae, and names of at least three references to: **Professor Daniel Udovic, Chair, ENVS Search Committee, Environmental Studies Program, 5223 University of Oregon, Eugene, OR 97403-5223. Website: http://www.uoregon.edu/~ecostudy**. Review of applications begins December 1, 2001.

The University of Oregon is an Affirmative Action/Equal Opportunity/Americans With Disabilities Act Institution committed to cultural diversity. Women and minorities are especially encouraged to apply.

FACULTY POSITION
Molecular Biology/Chemistry

The Departments of Molecular Biology and Chemistry at Princeton University in conjunction with the Lewis-Sigler Institute for Integrative Genomics invite applications for tenure-track faculty positions at the **ASSISTANT** or **SENIOR PROFESSOR** level. The candidates must be well trained in proteomics or protein structure/function analysis and work at the interface between biology and chemistry. We are seeking an innovative Scientist who enjoys working in an interactive environment.

Ph.D.s or M.D.s with postdoctoral research experience should send curriculum vitae, a short summary of research interests, and three letters of reference to: **Biological Chemistry Search Committee, c/o Gail Huber, Department of Molecular Biology, Princeton University, Princeton, NJ 08544**. For full consideration, applications should be received by December 15, 2001. For additional information about the Departments and the Institute, visit our **websites: http://www.molbio.princeton.edu, http://www.genomics.princeton.edu**, and **http://www.princeton.edu/~chemdept/index.html**.

Saba University School of Medicine: Several **FULL-TIME TEACHING POSITIONS** in the basic sciences: anatomy, histology, microbiology, neurosciences, physiology, medical psychology, genetics, pharmacology, pathology, physical diagnosis. Salary range: $40,000 to $45,000 USD, tax free. All positions are located in the Caribbean. Please send complete curriculum vitae and academic references to : **Dr. David Fredrick, P.O. Box 386, Gardner, MA 01440. Telephone: 978-630-5122; e-mail: drfredrick@yahoo.com; websites: http://www.saba.org** or **http://www.medicaluniversity.org**.

POSITIONS OPEN

Molecular biology and animal physiology: **FULL/ASSOCIATE/ASSISTANT PROFESSOR**. Two positions. Starting date: August 16, 2002. Molecular biology: Teach undergraduate courses in molecular and cell biology (such as biochemistry, cell biology, genetics, molecular genetics, microbiology, and introductory biology) that integrate biomedical and comparative perspectives. Physiology: Teach undergraduate courses in animal and human physiology and related areas such as anatomy and introductory biology that integrate biomedical and comparative perspectives. In addition, the successful candidates will be expected to develop externally funded research programs that include undergraduates; develop and supervise community-based activities that include undergraduates such as internships and research collaborations; participate in academic-year and summer programs that recruit and retain students from groups historically underrepresented in biology; and provide academic and career advising for undergraduate students, especially those seeking careers in biomedicine and biotechnology. Applicants must have a Doctoral degree in animal physiology, molecular biology, or a related field and a record of research and teaching commensurate with appointment at Assistant/Associate or Full Professor rank. We seek candidates with demonstrated skill in undergraduate teaching that integrates biomedical and comparative approaches, a record of research appropriate for undergraduate participation, and evidence of mentoring women and minority students in biology and supervising community-based activities that incorporate undergraduate students.

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

Arizona State University West, a vital component of ASU's multicampus structure, serves more than 5,000 undergraduate and graduate students at its modern, growing campus in Phoenix, one of the country's most dynamic multicultural and economic environments. ASU West is an urban, commuter campus with a focus on learner-centered education. The University is committed to a balance of research and teaching, faculty-student research collaboration, interdisciplinary perspectives, and the development of University-community partnerships.

Send (1) a letter of application specifying the position for which you are applying and including a description of your professional background and goals; (2) a statement of teaching philosophy and experience; (3) a description of current and future research plans that emphasizes participation by undergraduates; (4) curriculum vitae with e-mail address; and (5) the names, addresses, telephone numbers, and e-mail addresses of three references to: **Chair, Department of Life Sciences, College of Arts and Sciences, Attention: Brian Richardson, Mail Code 3051, Arizona State University West, P.O. Box 37100, Phoenix, AZ 85069-7100**. Review of applications will begin October 29, 2001, and every second Monday thereafter until the position is filled.

ASU West is an Affirmative Action/Equal Opportunity Employer in policy and practice. ASU West is dedicated to increasing the diversity of its campus community and encouraging an environment that offers students knowledge about local, national, and global communities.

POSTDOCTORAL FELLOWSHIPS: cardiovascular biology, Harvard University. Available immediately for Ph.D.s or M.D.s for NIH-funded research that uses genomics and proteomics to dissect the molecular basis for heart failure. Relevant experience useful but not required. Send curriculum vitae and names of three references to: **Dr. Guy L. Reed, HSPH II–127, 677 Huntington Avenue, Boston, MA 02115. E-mail: reed@cvlab.harvard.edu**.

POSITIONS OPEN

MULTIPLE FACULTY POSITIONS
Host-Pathogen Interactions and Medical Mycology

The Research Institute for Children and Louisiana State University Health Sciences Center, New Orleans, are seeking faculty members with interest and expertise in all aspects of host-pathogen interactions including the immunology, microbiology, cell biology, genetics, and ecology of microbial pathogenesis. At least two of the positions will be in medical mycology. Rank and salary will be commensurate with experience; applicants at the **ASSOCIATE** or **FULL PROFESSOR** level should have established, externally funded research programs. Faculty will have tenure-track joint appointments in the Department of Pediatrics and the appropriate basic science department. A competitive recruitment package includes start-up and ongoing research funds.

The Research Institute for Children is a newly established, well-funded collaboration between Children's Hospital of New Orleans and LSU Health Sciences Center. A 60,000 square foot state-of-the-art research building will be opened in October 2001. This round of faculty recruits will have the exciting opportunity of building a new research institute.

Inquiries should be directed to: **Seth Pincus, Director of the Research Institute for Children; Telephone: 504-896-9401; e-mail: spincu@lsuhsc.edu** or the **Associate Director, Jim Cutler** (especially regarding mycology positions); **Telephone: 406-994-2373; e-mail: jcutler@montana.edu**. Complete applications consisting of curriculum vitae, statement of research goals, and a list of three references should be submitted to: **Seth Pincus, M.D., Research Institute for Children, Children's Hospital, 200 Henry Clay Avenue, New Orleans, LA 70118**. *LSUHSC is an Affirmative Action/Equal Opportunity Employer.*

HUMAN BEHAVIORAL GENETICS
University of Colorado

The Department of Psychology, University of Colorado, Boulder, invites applications for a tenure-track position in human behavioral genetics at the **ASSISTANT PROFESSOR** level. Candidates who employ state-of-the-art methods to study the genetics of complex human behavioral characters and who might interface with our current research programs in human behavioral genetics (e.g., substance use/abuse or cognitive disabilities) will be given special consideration. Submit curriculum vitae, statement of research and teaching interests, sample research papers, and at least three letters of recommendation to: **Behavioral Genetics Search Committee, Department of Psychology, University of Colorado, 345 UCB, Boulder, CO 80309-0345**. Inquiries should be addressed to: **John C. DeFries, Chair, Behavioral Genetics Search Committee; Telephone: 303-492-2839; e-mail: john.defries@colorado.edu**. Application review will begin on November 1, 2001, and continue until the position is filled. *The University of Colorado at Boulder is committed to diversity and Equality in Education and Employment.*

ASSISTANT/ASSOCIATE PROFESSOR position is open at the Liver Research Center at the University of Massachusetts Medical Center. Areas of research interest include fatty liver, immunology and virology of liver diseases, liver cancer, and mechanisms of fibrosis. The candidate should have M.D. or Ph.D. degree; established, externally funded independent research; and potential for excellence in teaching. The successful candidate will join an interactive group of Scientists in a state-of-the-art new research building and participate in graduate/postgraduate training. Physician Scientists are particularly encouraged to apply. Applicants should submit curriculum vitae, research plans, and three names of references to: **Dr. Gyongyi Szabo, Director of Hepatology and Liver Center, Department of Medicine, University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, MA 01655. E-mail: gyongyi.szabo@umassmed.edu**.

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

CHAIR OF MOLECULAR GENETICS
DIRECTOR OF THE CENTER
FOR GENETIC AND TRANSLATIONAL MEDICINE

The Albert Einstein College of Medicine invites applications and nominations for the dual positions of Professor and Chair of the Department of Molecular Genetics and Director of the new Michael F. Price Center for Genetic and Translational Medicine. The distinguished scientist selected for these positions will have the opportunity to recruit several faculty immediately for the Department and to guide the program planning and recruitment of faculty for the Center, to occupy a 160,000 square foot research building scheduled for completion in 2005.

The Department of Molecular Genetics, an outgrowth of the first Department of Genetics in a medical school, currently encompasses 18 laboratories studying yeast, flies, worms, mice and humans. A separately endowed Human Genetics Program, directed by the Chair, provides support for a DNA microarray facility, genotyping and a family genetics facility as well as pilot projects in human genetics.

Albert Einstein offers an extremely interactive environment with numerous, well-equipped core facilities. The presence of 750 medical students, 325 graduate students, and 340 postdoctoral fellows attests to its educational mission. Among US medical schools, Einstein ranks 5th in NIH funding to basic science departments.

The Price Center for Genetics and Translational Medicine will be a facility dedicated to interdisciplinary studies by faculty from many departments dedicated to basic biomedical and genomic science and its translation to clinical medicine. The new Center will facilitate collaborative programs with long established NIH-funded Centers dedicated to Cancer, Diabetes, the Liver, and Sickle Cell Disease, as well as the Kennedy Center for Mental Retardation Research and the General Clinical Research Center. The diversity of the populations served by the College of Medicine's hospital affiliates throughout New York City provides extraordinary opportunities for an imaginative and committed leader to enhance the well being of the human condition through genomic research and translational medicine.

Please send applications or nominations to: **Dominick Purpura, Dean, Albert Einstein College of Medicine, 312 Belfer, Jack and Pearl Resnick Campus, 1300 Morris Park Avenue, Bronx, NY 10461** EOE

ALBERT EINSTEIN COLLEGE OF MEDICINE

Advancing science, building careers

TENURE TRACK POSITIONS
Mammalian Genomics in Nutritional Sciences

The Division of Nutritional Sciences at Cornell University invites applications for three tenure track positions at the level of Assistant Professor. The successful candidates are expected to develop extramurally funded research programs that address biological problems with a genetic and metabolic component, and contribute to the departmental curriculum. Applicants must possess an advanced degree (Ph.D., DVM, MD, or equivalent) with postgraduate training. We seek individuals with:

- expertise in mouse genetics and an interest in: epigenetics, identification of new genes of metabolic interest, the investigation of gene/nutrient interactions or the identification of genes that modify metabolic pathways.
- an interest in using gene targeting and mutagenesis to explore relationships between metabolism and disease, nutrition and development or gene nutrient interactions.
- expertise in human population genetics/epidemiology and an interest in investigating: gene/nutrient interactions in health and disease, the effects of single nucleotide polymorphisms on nutritional requirements, the relationships between nutrition and human genetic diversity or other metabolic questions with nutritional implications.

Applicants should send a letter of interest and research plan, curriculum vita, and three letters of reference to:

CORNELL **Search Committee Chair, Nutritional Genomics Search Committee, Division of Nutritional Sciences, 127 Savage Hall, Ithaca, New York 14853-6401**

Application material should be received by October 20. Salary will be commensurate with the successful candidate's academic credentials and experience. Women and minorities are encouraged to apply. AA/EOE

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

A pioneer in the field of proteomic-enabled drug discovery, **MDS Proteomics'** goal is to significantly improve the productivity of the pharmaceutical industry in discovering and developing new medicines for the treatment of disease. The company has developed exceptional capabilities in proteomic systems, technology, supercomputing, drug screening and biology and is uniquely positioned to build an effective bridge between gene discovery and therapeutic development. This distinctive capability is being used in collaborations with pharmaceutical and biotechnology companies as well as for the development of the company's own product pipeline. In its proteomics "facilities" in Europe and North America, the company focuses on drug target discovery and validation for both antibody and small molecule therapeutics. MDS Proteomics is a majority-owned subsidiary of MDS Inc.

We are currently hiring for the following positions based in Toronto.

Scientist - Molecular Biology

We seek a highly motivated molecular biologist to join our Proteomic Pathway analysis project as part of a large interdisciplinary team. The successful candidate will supervise and actively participate in the efforts of a molecular biology subunit of this project team.

Requirements include M.S./Ph.D. in Molecular biology with 2+ years of experience in RT-PCR cloning and protein expression in mammalian cells. Supervisory and industrial experience is a plus.

Research Associate - Cell Biology

We seek a highly motivated cell biologist to join our Signal Transduction Pathway analysis project as part of a large interdisciplinary team. The successful candidate will supervise and actively participate in the efforts of a Cell biology subunit of this project team.

Requirements include M.S. in Cell biology with 2+ years of experience in tissue culture and protein expression in mammalian cells. Supervisory and industrial experience is a plus.

Scientist - Cell/Molecular Biology

We are seeking a talented biologist with a keen interest in identifying novel protein targets for drug discovery and pursuing the most efficient experimental routes to validate these targets. The successful candidate will be a team leader responsible for planning, organizing, and implementing experiments to demonstrate the therapeutic value of selected targets.

Requirements include Ph.D. in Cell or Molecular biology with 3+ years of post-doctoral experience. A broad knowledge of cell and molecular biology techniques is required.

Post-doctoral - Molecular Biology

We seek candidates interested in applying their skills toward discovering the next generation of therapeutic targets. We have multiple positions in our Proteomics, target validation and drug discovery projects.

Requirements include Ph.D. in Cell or Molecular biology.

MDS Proteomics Inc. is an equal opportunity employer offering a competitive compensation and benefits package and an outstanding team oriented environment. Qualified individuals should send cover letters and resumes indicating position of interest to: **MDS Proteomics Inc., 6 New England Executive Park, Suite 400, Burlington, MA 01803 or e-mail to: HR_Boston@mdsp.com**

mds proteomics

TWO FACULTY POSITIONS PLANT BIOCHEMISTRY
Iowa State University, Ames

The Department of Biochemistry, Biophysics, and Molecular Biology (BBMB) (**website: http://www.bb.iastate.edu**) at Iowa State University invites applications from outstanding candidates for two tenure-track **ASSISTANT PROFESSOR** positions in the area of plant biochemistry. These positions are part of the new Plant Sciences Institute (**website: http://www.plantsciences.iastate.edu**), which represents a major commitment by the state and the University to improve its already strong position in basic plant science research. The Department of BBMB offers excellent facilities and an interactive research environment including plant biochemistry, molecular structure determination, enzymology, metabolic analysis, molecular biology, signal transduction, functional genomics, and computational biology. Preference will be given to candidates who clearly demonstrate the potential to develop and lead a nationally prominent, competitively funded program within this research environment and who display a commitment to excellence in teaching at the graduate and/or undergraduate level. High-quality laboratory space and a generous start-up package will be made available. In addition, the successful applicants will have access to a state-of-the-art metabolomics research laboratory recently funded by $2.3 million from the University and the W. M. Keck Foundation (**website: http://www.wmkeck.org**).

Candidates should hold the Ph.D. or equivalent degree and have postdoctoral experience. Applications should include a cover letter, curriculum vitae, a description of research accomplishments and planned future proposals, a statement of teaching interests, and three letters of recommendation sent under separate cover. To guarantee consideration, applications must be received by December 1, 2001. Materials should be sent to:

Faculty Search Committee
Department of BBMB
1210 Molecular Biology Building
Iowa State University
Ames, IA 50011

Iowa State University is an Affirmative Action/Equal Opportunity Employer. Applications from women and minority candidates are especially encouraged.

CLARE BOOTH LUCE ASSISTANT PROFESSORSHIP
Tulane University

The Chemistry Department of Tulane University is seeking a highly qualified person to fill a tenure-track appointment as the Clare Booth Luce Assistant Professor of chemistry. *The position is restricted by the Luce Foundation to U.S. citizens who are women looking for their first academic position.* Candidates should have a Ph.D. in chemistry, biochemistry, physics, or materials science and should show exceptional promise for teaching at a Ph.D.-granting institution. The successful applicant will be expected to have a strong commitment to excellence in teaching chemistry at both the undergraduate and graduate levels and to develop an independent research program. Competitive salary and start-up funds are available. Interested candidates should send a letter of intent, curriculum vitae, a statement of research interests, and have three letters of recommendation sent to: **Luce Professorship Search Committee, Department of Chemistry, Tulane University, New Orleans, LA 70118**. To ensure full consideration, the Search Committee should receive all materials by November 1, 2001.

The Department of Biology at the University of San Francisco (USF) invites applications for a tenure-track position in genetics at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level to begin in August of 2002. Individuals utilizing molecular techniques to study the genetics of natural populations (and who therefore could also offer field courses) are especially encouraged to apply. For details, please see **website: http://www.usfca.edu/biology/**. *USF is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSOR, BIOLOGY. The Department of Biology at Shippensburg University invites applications for a tenure-track position as a Geneticist starting August 2002. Responsibilities include teaching introductory genetics, an upper-division course in your area of specialty, and introductory biology courses. Scholarly activity will be required. The successful candidate will be expected to have a Doctorate from an accredited institution completed by December 31, 2001; a strong commitment to undergraduate instruction; and the equivalent of two years of teaching experience at the college level. A successful demonstration of teaching effectiveness and a scholarly seminar will be required as part of the on-campus interview. Applicants should send curriculum vitae; official transcripts (both graduate and undergraduate); a statement of teaching philosophy and research interests; and the names, addresses, and telephone numbers of three references to: **Geneticist Search Committee, Department of Biology, Shippensburg University, 1871 Old Main Drive, Shippensburg, PA 17257-2299**. Review of applications will begin October 29, 2001, and will continue until the position is filled. Competitive salary and excellent benefits package. *Shippensburg University is an Equal Opportunity Employer. Candidates must furnish proof of eligibility to work in the United States upon appointment.*

TENURE-TRACK FACULTY POSITION DEPARTMENT OF BIOENGINEERING
The University of Utah

Applications are invited for an **ASSISTANT/ASSOCIATE PROFESSOR**-level, tenure-track faculty position in biointeractive materials. Candidate must have a Doctorate and a strong physical science and engineering background with a biological emphasis to his/her research. We are seeking candidates with demonstrated expertise in one of the following areas: (1) biodegradable tissue scaffolding or artificial ECM, (2) engineered structural biomaterials, and (3) biomimetic structures and/or devices.

Appointee will be expected to develop significant research programs and teach appropriate undergraduate and graduate courses. See **website: http://www.bioen.utah.edu** for further information.

Complete curriculum vitae, names of three references, and a brief career goals/objectives statement should be sent to: **Dr. V. Hlady, Search Committee Chair, Department of Bioengineering, 50 South Central Campus Drive, Room 2480, Salt Lake City, UT 84112-9202**. The application review will continue until a qualified candidate is selected.

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

PLANT ECOLOGY

The Biology Department, University of Wisconsin–Stevens Point, offers a tenure-track position in plant ecology. Responsibilities include undergraduate teaching in introductory biology, general ecology lecture and laboratory, and plant ecology; a research program involving undergraduates; and student advising. UWSP is a primarily undergraduate, comprehensive university with a teaching emphasis. The Department received the Regents' award for excellence in undergraduate education. Appointment at **ASSISTANT PROFESSOR**; salary commensurate with experience. Coursework, research, and dissertation in terrestrial or aquatic plant ecology required; experience commensurate with a commitment to quality undergraduate teaching desired. Postdoctoral research, publications, and grant history will be considered. Applications must include curriculum vitae, statement of teaching philosophy, three recommendation letters, and official transcripts. Send correspondence to: **Plant Ecology, Dr. Robert Bell, Department of Biology, UWSP, Stevens Point, WI 54481-3897. Telephone: 715-346-2074; FAX: 715-346-3624; e-mail: rbell@uwsp.edu**. Review of applications begins 2 November 2001 until filled. *UWSP is an Affirmative Action/Equal Opportunity Employer and encourages applications from any and all qualified candidates.*

ASSISTANT PROFESSOR PHARMACOLOGY AND TOXICOLOGY
Indiana University School of Medicine

The Medical Sciences Program of the Indiana University School of Medicine in Bloomington invites applications from candidates with at least two years of postdoctoral experience and a strong publication record for a 12-month, tenure-track position as Assistant Professor of Pharmacology and Toxicology starting July 2002. The successful applicant is expected to participate in teaching pharmacology to medical and graduate students and to establish an extramurally funded, independent research program asking questions of fundamental importance to human neoplastic disease. The Program also wants to strengthen existing ties with the NCI-designated Cancer Research Institute and the Indiana Genomics Initiative. Preference will be given to those candidates who can document both teaching and cancer research expertise and whose research interests complement those of current faculty. More information may be obtained from **website: http://www.indiana.edu/~medsci/**. Applicants should send curriculum vitae; a statement of teaching commitment and philosophy; a summary of current and anticipated research activities; and arrange to have three letters of reference sent by November 15, 2001, to: **Pharmacology Search Committee, Medical Sciences Program, Indiana University School of Medicine, Jordan Hall, Bloomington, IN 47405-4201**.

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

PHARMACOLOGY FACULTY POSITION: A full-time position at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level is available in the Department of Pharmacology of the College of Medical Sciences at Nova Southeastern University. The candidate's responsibilities will include participation in team-taught pharmacology courses to students in medical, dental, optometry, and physician assistant programs. The position requires a Ph.D. in pharmacology or an M.D. Individuals with teaching experience or interests in autonomic, cardiac, and renal pharmacology or antimicrobials and chemotherapeutics are particularly encouraged to apply. Although primarily a teaching position, opportunities to engage in research do exist. The College of Medical Sciences is located in the new Health Professions Division facility on the Ft. Lauderdale, Florida, campus. Salaries are competitive and dependent upon qualifications; fringe benefits are generous. Please send letter of interest; curriculum vitae; copies of graduate transcripts; and the names, addresses, and telephone numbers of three references to: **Position Number 999017, Nova Southeastern University, Human Resources Department (HLF), 3301 College Avenue, Ft. Lauderdale, FL 33314**. *Nova Southeastern University is an Affirmative Action/Equal Opportunity Employer.*

HARVARD UNIVERSITY: The Department of Psychology anticipates making two appointments at the **ASSISTANT** or (untenured) **ASSOCIATE PROFESSOR** level to begin July 1, 2002. One appointment will be in the area of cognition. We are particularly interested in individuals working in the areas of memory, language, or problem solving and including techniques such as behavioral, neuroimaging, neuropsychological, and/or computational modeling. The other appointment will be in the area of either neuroethology, behavioral neuroscience, or animal cognition. Candidates with strong research and teaching interests in any of these areas are invited to submit curriculum vitae and representative reprints to: **Search Committee, Department of Psychology, Harvard University, WJH 230, 33 Kirkland Street, Cambridge, MA 02138**. Candidates should also arrange to have at least three letters of recommendation sent to the above address. Closing date for applying is November 30, 2001. *Harvard University is an Affirmative Action/Equal Opportunity Employer. Applications from women and members of minority groups are especially welcome.*

UNIVERSITY OF
Miami
SCHOOL OF MEDICINE

Walter G. Ross Endowed Chair in Developmental Neuroscience
University of Miami School of Medicine

Applications are invited to fill the Walter G. Ross Chair of Developmental Neuroscience at the University of Miami. The Ross Chair will support an internationally recognized neuroscientist with an outstanding record of accomplishment in the general area of neural development. We are especially interested in individuals whose research is targeted to one or more of the following areas:

- initial development of nerve cells from uncommitted stem cells
- neuronal cell survival and protection from injury
- growth and regeneration of neuronal processes
- formation of specific connections between neurons and their targets during development and regeneration
- relationship between basic neuroscience and human neurological diseases

Priority will be given to researchers with the ability to complement and synergize with existing excellent programs in clinical and basic neuroscience at the University. Excellent laboratory space and development funds will be available to the Ross Professor. Rank and salary will be commensurate with experience.

Review of applications will begin October 15, 2001, and will continue until the position is filled. Please send curriculum vitae, statement of research accomplishments and plans, and the names of three references to:

John L. Bixby, Ph.D., Chair
Ross Professor Search Committee
Department of Pharmacology R-189
University of Miami School of Medicine
1600 NW 10th Avenue
Miami, FL 33136

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Named the 'A+' healthcare company by Forbes Global Magazine, Élan Pharmaceuticals takes pride in taking care. From our well-documented advances in neurology and pain management to our pioneering development of an Alzheimer's immunotherapy, we're committed to channeling the strength of an internationally growing company into biopharmaceutical innovation.

We have the following opportunity in our South San Francisco, CA facility:

Scientist/Principal Scientist

Are you a highly motivated and energetic bench scientist? Play an active role in identifying and characterizing new targets of therapeutic potential in neurodegenerative diseases, using biochemical techniques such as affinity proteomics and 2-D gel electrophoresis. You would be expected to contribute to the development of a research proteomics effort in the Biochemistry group, be involved in one or more discovery projects in the Biology department, and supervise the activities of junior laboratory members.

A Ph.D. or equivalent degree in Biochemistry or a related Biological Science, with 6 or more years of relevant post-doctoral and industrial work experience are required. Experience with functional characterization of native and recombinant enzymes and receptors are highly desirable.

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Postdoctoral/scientist position
Research association/technician

Postdoctoral/scientist position: Three positions are available in the newly formed Laboratory at the Diabetes branch of the National Institutes of Diabetes and Digestive and Kidney Diseases (NIDDK), National Institute of Health (NIH), to study pancreatic islet cell development, with an emphasis on islet stem cell biology. Applicants are expected to have a strong background in cellular and development biology. Expertise in biology of pancreas is preferred but not required. The position offers an exceptional opportunity to study pancreatic and non- pancreatic development within the interdisciplinary approach of stem cell biology. Salary is commensurate with experience. Interested applicants should send a curriculum vitae and names of three references to: Ms Kay Place, NIDDK/NIH, Bldg. 10,Rm.9N222, 10 Center Dr. Bethesda, MD 20892-1818.

Research association/technician: Position is available in the newly formed laboratory at the Diabetes Branch of the National Institutes of Diabetes and Digestive and Kidney Diseases (NIDDK), National Institute of Health (NIH), to study pancreatic islet cell development and applications stem cell technology to treatment of diabetes. Applicant must have BS or MS degree in biochemistry, molecular biology with at least two years of professional experience. Expertise in standard molecular biological, biochemical, and mammalian cell culture techniques is required. Responsibilities include records of experimental procedures and reagents, and conducting laboratory. Interested applicants should send a curriculum vitae to: Ms. Kay Place, NIDDK/NIH, Bldg. 10,Rm.9N222, 10 Center Dr., Bethesda, MD 20892-1818.

NIDDK

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ASSISTANT PROFESSOR OF PHYSIOLOGY
Southern Illinois University Carbondale
School of Medicine

The Department of Physiology at Southern Illinois University Carbondale School of Medicine invites applications for a tenure-track faculty position at the Assistant Professor level. The Department has an established graduate and undergraduate program with active research interests in molecular, cellular, and systemic physiology. The candidate's research program is expected to complement and expand existing departmental strengths. The successful candidate will also participate in the medical school, graduate and undergraduate teaching responsibilities of the Department, and should be qualified to teach cardiovascular physiology. The position is a 12-month appointment with a competitive salary, excellent facilities, and substantial start-up funds. Applicants must have a Ph.D., M.D., or equivalent degree in physiology, molecular biology, biochemistry, pharmacology, or related field. Postdoctoral experience is preferred and promise of an active, externally funded research program is required. Additional departmental information can be obtained via the following **website: http://www.som.siu.edu/physiology/**.

To receive full consideration, applications should be submitted by November 1, 2001, for an anticipated starting date of March 1, 2002. Applicants are asked to submit curriculum vitae, a statement of teaching qualifications and experience, a description of research interests, and arrange to have at least three letters of reference sent to:

Faculty Search Committee
c/o Dr. Andrzej Bartke
Department of Physiology
Southern Illinois University
School of Medicine
Carbondale, IL 62901-6512

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

FACULTY POSITIONS
Biological Sciences and/or Biological Education

The Department of Biological Sciences, University of Northern Colorado, is searching for three tenure-track faculty positions: **ASSISTANT/ASSOCIATE PROFESSOR** in biological sciences and education, **ASSISTANT PROFESSOR** in cell biology and eukaryotic genetics, and **ASSISTANT PROFESSOR** in mammalian or human physiology. Positions will be available August 2002. For complete position descriptions, visit our **website: http://asweb.unco.edu** or contact: **Dr. Curt M. Peterson; Telephone: 970-351-2923; e-mail: cmpeter@bentley.unco.edu**. Positions are contingent upon funding. Applicants should submit curriculum vitae, statements of teaching philosophy and research experience/interests, selected publications, contact information for three to five references (including telephone and e-mail), and transcripts to: **Chair, Search and Screen Committee, Department of Biological Sciences, University of Northern Colorado, 501 20th Street, Greeley, CO 80639**. Review of applications will begin November 1, 2001, and continue until filled. *UNC is an Affirmative Action/Equal Opportunity Employer and is committed to fostering diversity in its student body, faculty, and staff. AAEO office: Carter Hall 2011.*

RESEARCH ASSOCIATE POSITION, molecular biology research. The Division of Hematology/Oncology at Maimonides Medical Center (Brooklyn, New York), a Sinai School of Medicine affiliate, is recruiting a Scientist with a minimum of two years of experience. We are doing research in myelofibrosis. *The position requires a U.S. Ph.D.* and expertise in all molecular biology technology. Salary is $50,000 including benefits. Send curriculum vitae and the names and telephone numbers of three references to: **J. C. Wang, M.D., Maimonides Medical Center, Division of Hematology/Oncology, Suite 501, Brooklyn, NY 11219. Telephone: 718-283-8297; FAX: 718-635-7110.**

POSITIONS OPEN

University of Nebraska Medical Center

FACULTY POSITIONS
UNIVERSITY OF NEBRASKA MEDICAL CENTER
Biochemistry and Molecular Biology

The Department of Biochemistry and Molecular Biology invites applications for an **ASSISTANT/ASSOCIATE PROFESSOR** position. Qualifications include a Ph.D. or M.D. degree and relevant postdoctoral experience. Preference will be given to outstanding candidates who can apply state-of-the-art biochemical and molecular approaches including but not limited to proteomics and functional genomics to cancer research. The ideal candidate will have research interests and experience that will enhance ongoing research in the Department **(website: http://www.unmc. edu/Biochemistry/)**.

Each successful applicant will be expected to have or develop a funded, independent research program and to contribute significantly to the teaching programs of the Department. Review for tenure may be requested. Submit curriculum vitae, selected reprints, a brief description of current and future research interests, teaching experience, and three letters of reference to: **Chair, BMB Search Committee, Department of Biochemistry and Molecular Biology, 984525 Nebraska Medical Center, Omaha, NE 68198-4525**

UNMC is an Equal Opportunity/Affirmative Action Employer. Minorities and women are encouraged to apply.

NIH SCIENTIFIC REVIEW ADMINISTRATOR POSITION
Neuroscience of Vision

The Center for Scientific Review (CSR), National Institutes of Health (NIH), seeks a **NEUROSCIENTIST** with expertise in visual perception who is interested in serving as a Scientific Review Administrator (SRA). An SRA is responsible for understanding the current state and identifying future directions in visual neuroscience; selecting members of review panels; and managing study section meetings, which includes facilitating interactions with study section members and communicating the results of their deliberations to applicants and the staff of the NIH institutes that fund the research.

Applicants must have a Ph.D. or M.D. degree (or have equivalent experience), postdoctoral research training, a record of independent research accomplishment, and administrative experience. Salary is commensurate with experience. Submit curriculum vitae to: **Christine Melchior, Ph.D., Chief, IFCN IRG, Center for Scientific Review, NIH, 6701 Rockledge Drive, Room 5176. MSC 7844, Bethesda, MD 20892-7844. E-mail: melchioc@csr.nih.gov**. *NIH is an Equal Opportunity Employer.*

UNIVERSITY OF CALIFORNIA, IRVINE
DEPARTMENT OF PATHOLOGY

Applications are invited for a **POSTDOCTORAL RESEARCHER** to work with a group developing vaccines for *Chlamydia trachomatis* infections. The candidate should have a Ph.D. in biological sciences with strong motivation in science and research. Experience with molecular techniques including expression of proteins using recombinant vectors and protein biochemistry is essential. Expertise working with animal models is desired. Salary range: $30,888 to $41,736. Candidates should send their curriculum vitae; statement of research interests; and the names, addresses, e-mail addresses, and telephone numbers of three references to: **Luis M. de la Maza, M.D., Ph.D., Department of Pathology, Medical Sciences, Room D440, University of California, Irvine, Irvine, CA 92697-4800. E-mail: lmdelama@uci.edu**. *The University of California, Irvine, is an Equal Opportunity Employer committed to excellence through diversity.*

POSITIONS OPEN

ASSISTANT PROFESSOR
DEPARTMENT OF BIOLOGY
The College of New Jersey

The Department of Biology is currently seeking candidates for a tenure-track position in animal physiology or related fields: molecular, integrative, evolutionary or ecological physiology; neurobiology; endocrinology; and physiological genomics. The teaching assignment of the successful applicant will include a junior/senior course in his/her area of specialty. The successful candidate will be expected to develop a research program involving highly motivated undergraduates. Start-up funds are available. Requirements: Ph.D.; postdoctoral experience preferred.

The College of New Jersey is a highly selective, comprehensive institution with 5,800 undergraduate students. Located on a 289-acre, tree-lined campus, our location in the greater Princeton, New Jersey, area offers opportunities to interface with pharmaceutical/biotechnological companies and other academic institutions. The Biology Department is part of the newly constituted School of Science and offers the opportunity for collaborative work with other departments of the school. The Department is housed in a newly constructed building with excellent facilities for research and teaching.

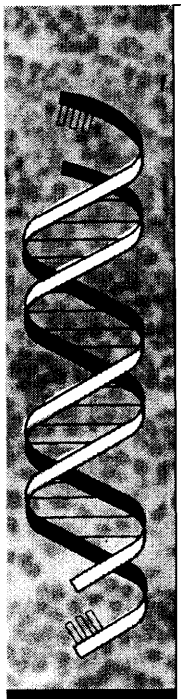
A review of applications will begin January 7, 2002. To apply, please send curriculum vitae, transcripts, statement of teaching and research interest, representative publications, and three letters of recommendation to: **Dr. Howard K. Reinert, Chair, Search Committee, Department of Biology, The College of New Jersey, P.O. Box 7718, Ewing, NJ 08628-0719. Telephone: 609-771-2474; FAX: 609-637-5118**. For further information about The College, please visit our **website: http://www.tcnj.edu**. *To enrich education through diversity, The College of New Jersey is an Affirmative Action/Equal Opportunity Employer.*

HEAD
DEPARTMENT OF MARINE BIOLOGY
Texas A&M University of Galveston

Texas A&M University at Galveston, the coastal campus of Texas A&M University, is seeking a Department Head for the Department of Marine Biology. The Department offers B.S. degrees to approximately 500 undergraduates enrolled in marine biology, marine fisheries, and marine biology/biomedical sciences curricula. Its 13 tenure-track faculty also mentor nearly 60 graduate students through graduate appointments at Texas A&M University. A description of the Department's programs and faculty is available at **website: http://www.marinebiology.edu/**.

The successful applicant will assume a tenured, **FULL PROFESSOR** position responsible for administering, promoting, and improving the Marine Biology Department's undergraduate and graduate programs and facilities and establishing an active research program or engaging in other scholarly activities.

Applicants must have a Ph.D. in biology or related field, a record of scholarly achievement, prior administrative experience, and research credentials expected of a Full Professor. Interested persons must submit a letter of application, résumé, statements on leadership and teaching philosophies, research plans and equipment requirements, and three letters of reference to: **Human Resources Department, MARB Department Head, Texas A&M University at Galveston, P.O. Box 1675, Galveston, TX 77553-1675**. Signed applications must be on file to be considered for this position. Applications can be downloaded from: **website: http://www.tamug.tamu.edu/hrd**. Application deadline is 15 November 2001. *Texas A&M University is an Affirmative Action/Equal Opportunity Employer committed to excellence through diversity and particularly invites applications from minorities, women, veterans, and persons with disabilities.*



FIAT·LUX

THE WALTER AND ELIZA HALL INSTITUTE

The Walter and Eliza Hall Institute of Medical Research

Future Scientific Leader Fellowship

The Miller Fellowship is one of our prestigious Leadership Fund fellowships offered for research in Australia's pre-eminent biomedical research institute. The Leadership Fund was established to invest in scientific leadership and further the traditions of discovery and excellence set by three renowned Australian Scientists.

Advanced researchers showing potential to be among Australia's leading researchers in biomedical sciences are invited to apply for this inaugural Miller Fellowship. For this inaugural appointment, we are seeking applicants from the areas of structural biology and bioinformatics.

The Fellowship, tenable for five years, will provide A$150,000 per year towards the Fellow's salary, technical and operating costs. The level of appointment will be commensurate with experience.

Written applications, including full CV, brief research history, publication list and the names of three professional referees should be forwarded to:

Prof Suzanne Cory AC PhD FAA FRS, Director, The Walter and Eliza Hall Institute of Medical Research, Post Office, Royal Melbourne Hospital, Victoria 3050, Australia. Email: fraser@wehi.edu.au

Mastery of Disease Through Discovery

93175

Gene Regulation and Chromosome Biology Laboratory
Center for Cancer Research
National Cancer Institute
National Institutes of Health

Senior Research Fellow and Postdoctoral Fellow

A Senior Research Fellow and a Postdoctoral Fellow position are available immediately in the Movable Genetic Elements Section to study the mechanism and consequences of Ty1 element retrotransposition in S. cerevisiae. Research projects encompass several areas of Ty biology, with emphasis on the mechanism of Ty1 integration, and copy number control. We are especially interested in using whole genome analyses to address these problems.

Applicants should have a strong background in molecular biology, biochemistry, microbiology, virology and/or bioinformatics. Applicants to the Senior Research Fellow position must have relevant postdoctoral experience (salary range: 45K, depending on experience). The salary range for postdoctoral positions is 32K-38K, commensurate with experience.

To apply, submit a cover letter, curriculum vitae, bibliography, and names of three references to:

Dr. David J. Garfinkel
Gene Regulation and Chromosome Biology Laboratory
NCI at Frederick, P.O. Box B
Frederick, MD 21702-1201
Fax: 301-846-6911, E-mail: garfinke@ncifcrf.gov
Website: http://web.ncifcrf.gov/research/pi/default.asp?id=6

Application deadline: MUST BE POSTMARKED BY November 30, 2001

The National Cancer Institute is an Equal Opportunity Employer.

NATIONAL JEWISH
Medical and Research Center

Global Leader in Lung, Allergic and Immune Diseases

Faculty Position

The Department of Immunology at the University of Colorado Health Sciences Center and National Jewish Medical and Research Center invite applications for a faculty position at the Assistant or Associate Professor level. Individuals working in Immunology or related disciplines are encouraged to apply. Candidates should have a Ph.D. and/or M.D. degree, at least two years of post doctoral experience, and a record of outstanding research. Interested individuals should send a curriculum vitae, a statement of research interests, and the names of three references to:

Drs. Philippa Marrack and John Cambier
Chairs, Search Committee
National Jewish Medical and Research Center
1400 Jackson Street
Denver, CO 80206

The University of Colorado and the National Jewish Medical and Research Center are Affirmative Action/Equal Opportunity Employers.

University of Colorado Health Sciences Center

NATIONAL INSTITUTES OF HEALTH

IMAGING SCIENCES PROGRAM
NIH Warren G. Magnuson Clinical Center

JOB OPPORTUNITIES

The Imaging Sciences Program in the NIH Warren G. Magnuson Clinical Center seeks highly qualified Postdoctoral Fellows, Staff Fellows and Staff Scientists in the following areas:

Molecular Pathology	**Molecular Biology**
Synthetic Chemistry	**Protein Chemistry**
Radiochemistry	**MRI Physics**
Ultrasound Physics	**Image Processing**

The Imaging Sciences Program offers a unique opportunity for conducting multidisciplinary research in the exciting field of in vivo molecular imaging. NIH offers an extensive benefits package for which you may be eligible depending upon the appointment mechanism: 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 Imaging Science Program may visit the ISP web site at **http://www.cc.nih.gov/imaging/** for a list of the current positions available.

POSITIONS OPEN

RESEARCH ASSOCIATE
Histological Toxicologist/Electron Microscopist

The Institute of Environmental and Human Health (TIEHH), Texas Tech University/TTU Health Sciences Center, is seeking a senior person with experience in histology and electron microscopy. Applicants should have a Master's degree or Ph.D. in biology, molecular biology, zoology, pathology, toxicology, or other related field and experience in histological examination. In addition, experience preparing specimens for and operating a transmission electron microscope would merit special consideration.

The successful applicant will be provided laboratory and office space, tissue/slide preparation equipment, and numerous opportunities to interact with ongoing, federally funded research. The person filling this position will be encouraged to interact and participate with an interdisciplinary environmental toxicology faculty in research, grant proposal preparation, and graduate student training. Salary and benefits are commensurate with experience. The position begins October 1, 2001, and is fully funded for at least one year and may be extended through 2003 pending availability of funds. Please send curriculum vitae and names and contact information for three references electronically to: **Dr. Philip N. Smith; e-mail: phil.smith@tiehh.ttu.edu; Telephone: 806-885-0316.**

Texas Tech University is an Affirmative Action/Equal Employment Opportunity Employer.

ASSISTANT PROFESSOR

The Whitney Laboratory, a research center of the University of Florida, invites applications for a tenure-track Assistant Professor position. This will be a 12-month, state-funded, full-time research position. The successful applicant will be expected to develop a high-quality, extramurally funded research program that uses comparative models to understand fundamental biological principles. We are seeking an individual whose research will complement and extend existing programs.

The Whitney Laboratory is a center for biomedical research that emphasizes using marine animal models. It provides an exceptional, highly interactive research environment with recognized strengths in cell and molecular biology and neuroscience. Areas of current research include sensory biology, cell signaling, developmental biology, and vector biology/parasitology. Applicants should submit complete curriculum vitae together with a statement of research interests and three letters of recommendation to: **Chair of Search Committee, Whitney Laboratory, 9505 Ocean Shore Boulevard, St. Augustine, FL 32080.** Detailed information about the Whitney Laboratory is available at **website: http://www.whitney.ufl.edu.** Deadline for application: December 31, 2001.

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

Xencor, Inc. is a well-financed, private company that develops new computational, proteomic, and chemical genetic technologies to accelerate drug discovery. We are seeking highly motivated and enthusiastic Scientists to help us continue to develop cutting-edge technologies on the frontiers of chemistry and biology. We currently have the following positions available: **RESEARCH SCIENTIST** (Job Code CG); **RESEARCH ASSOCIATE**, chemistry; **SCIENTIST**, chemical diversity; **SCIENTIST**, surface chemistry; **PROGRAM LEADER**, therapeutic areas; **SCIENTIST/RESEARCH ASSOCIATE** (Job Code CB-AM); **TECHNOLOGY SPECIALIST**, library construction; **COMPUTATIONAL CHEMIST/STRUCTURAL BIOLOGIST**.

Visit our **website: http://www.xencor.com** for detailed job descriptions.

Xencor offers a competitive salary, benefits package and stock options, and the opportunity for advancement in a challenging and stimulating work environment. Please submit your résumé to: **Xencor, 111 West Lemon Street, Monrovia, CA 91016. E-mail: recruiting@xencor.com.** *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

VICAL INC.

Vical, The Naked DNA Company™, is rapidly growing in anticipation of the launch of our first product and the expansion of product applications leveraging our patented nonviral gene delivery technology. We currently have the following opportunities:

RESEARCH SCIENTIST/IMMUNOLOGIST (Job Code 1200)

Responsible for developing and evaluating strategies for improving immune responses to DNA vaccines. Responsibilities will include the use of *in vivo* animal models of vaccination or cancer therapy and assay development.

Requires a Ph.D. in immunology or a related field with more than two years of experience. Knowledge of antigen processing; presentation; and cognate recognition of the biology of humoral, cellular, and mucosal immune responses is necessary. Must have strong analytical skills and be proficient in performance of T cell assays including ELISPOT, CTL, FACS, and lymphocyte proliferation assays.

RESEARCH SCIENTIST/MOLECULAR BIOLOGIST/IMMUNOLOGIST (Job Code 1221)

The successful candidate will join a collaborative group of Researchers who are responsible for improving the immunogenicity of plasmid DNA vaccines.

Requires a Ph.D. in molecular biology with an emphasis in the immune response to antigens or a comparable level of research experience. A thorough knowledge of the techniques common to molecular biology and experience working with plasmid-based gene expression in eukaryotic cells is essential. In addition, the successful candidate must demonstrate a research interest in the mechanisms of antigen processing and presentation as well as an understanding of ancillary factors involved in generating an immune response to DNA vaccines. Expertise in the identification and functional analysis of novel immune stimulatory factors would be highly desirable.

For consideration, please send your résumé referencing Job Code to: **Vical Inc., Human Resources, 9373 Towne Centre Drive, Suite 100, San Diego, CA 92121. FAX: 858-646-1350.** *Equal Opportunity Employer.*

RESEARCH ASSOCIATE I
POSTDOCTORAL FELLOW
University of Delaware
Chemistry and Biochemistry

Two positions are available for research focused on understanding the structure and function of membrane or interface-associated enzymes that catalyze their reaction in an interfacial manner. Our objective is directed toward understanding the functional significance of structural similarities and differences among a family of 14kDa-secreted PLA2 enzymes. The primary responsibility of the Research Associate position is to solve the X-ray crystallographic structures of new family members of PLA2s as well as forms of PLA2 that mimic the enzyme bound to a substrate interface. A B.S. degree in chemistry and two years of related work experience along with demonstrated competence in carrying out all aspects of protein crystallography are required. The Postdoctoral position will focus on functional studies utilizing the techniques of interfacial kinetics, site-directed mutagenesis, and spectroscopy of PLA2 with a goal of understanding unresolved details of the mechanism. Candidates should send a letter of interest; curriculum vitae; and contact information for three references by October 15, 2001, to: **Brian Bahnson, Assistant Professor, University of Delaware, Department of Chemistry and Biochemistry, Newark, DE 19716. E-mail: bahnson@udel.edu; FAX: 302-831-6335.** *The University is Delaware is an Equal Opportunity Employer that encourages applications from minority group members and women.*

POSITIONS OPEN

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

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

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

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

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

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

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

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

FACULTY POSITION
Food Nanotechnology

A tenure-track position of **ASSISTANT PROFESSOR** in the pioneering field of nanotechnology is open in the Department of Food Science (**website: http://foodsci.rutgers.edu/**) at Rutgers University with an appointment date of 1 September 2002. Development of a research program at the interface of nanotechnology and food-based biomaterials is expected along with teaching undergraduate and graduate courses. Qualified applicants might have backgrounds in biophysical chemistry; chemistry; engineering (biochemical, biological, biomedical, mechanical, tissue); food science; microbiology; molecular biology/biochemistry; physics; or polymer science. Postdoctoral and/or industrial experience is highly desirable. Send curriculum vitae, statement of research goals, and the names and addresses of three references to: **Dr. George M. Carman, Search Committee Chair, Department of Food Science, Rutgers University, 65 Dudley Road, New Brunswick, NJ 08901. E-mail: carman@aesop.rutgers.edu.** Review of applications will commence on 1 November 2001 and continue until a suitable candidate is found. *Rutgers University is an Equal Opportunity/Affirmative Action Employer. Minority and female applicants are encouraged to apply.*

POSTDOCTORAL FELLOW

Gene Regulation and Chromosome Biology Laboratory
Center for Cancer Research
National Cancer Institute
National Institutes of Health

Two positions are available immediately in the Developmental Genetics Section to study the mechanisms of novel DNA base modification, recombination and chromatin based gene silencing in the mating-type region of fission yeast. Another project is to map the hypothesized *Rght* gene causing humans to prefer right over left hand use. Research projects involve molecular genetics with yeast and standard techniques for mapping molecular markers in human samples.

Applicants should have a strong background in molecular biology, biochemistry, microbiology, genetics and human mapping techniques. The salary range for postdoctoral positions is 32K - 45K, commensurate with experience.

To apply, submit a cover letter, curriculum vitae, bibliography, and names of three references to:

Dr. Amar J.S. Klar
Gene Regulation and Chromosome Biology Laboratory
NCI at Frederick, P.O. Box B
Frederick, MD 21702-1201
Fax: 301-846-6911, E-mail: klar@ncifcrf.gov
Website: http://web.ncifcrf.gov/research/pi/default.asp?id=11

Application deadline: MUST BE POSTMARKED BY November 30, 2001

The National Cancer Institute is an Equal Opportunity Employer.

Faculty Position
Department of Molecular and Structural Biochemistry
North Carolina State University

The Department of Molecular and Structural Biochemistry at North Carolina State University invites applications for a tenure-track faculty position at the Assistant Professor level. The Department is in the College of Agriculture and Life Sciences, is affiliated with the College of Physical and Mathematical Sciences, and has interactions with many scientists in the Research Triangle area. This search is for candidates who will focus on protein X-ray crystallography and who will complement the University-wide efforts in proteomics. In addition to a strong research program, responsibilities will include undergraduate and graduate teaching. A Ph.D. in Biochemistry or closely related field is required. Qualified applicants must provide curriculum vitae, a research statement, and a description of teaching interests. Three reference letters should be sent directly. Review of applications will begin on December 1, 2001 and will continue until a suitable candidate is found. The proposed hire date is July 1, 2002. Application materials should be mailed to:

Dr. Carla Mattos, Chair, Faculty Search Committee
Department of Molecular and Structural Biochemistry
Box 7622, 128 Polk Hall
North Carolina State University
Raleigh, NC 27695-7622
http://biochem.ncsu.edu

NC State University is an Equal Opportunity and Affirmative Action Employer. Individuals with disabilities desiring accommodations in the application process should contact Dr. Carla Mattos (919)513-2556, carla_mattos@ncsu.edu or Dr. Dennis Brown (919)515-5802, dennis_brown@ncsu.edu.

Faculty Position in Computational and Statistical Genomics Assistant Professor

Cornell University
Ithaca Campus

Applications are invited for a tenure track assistant professor position in the use and development of databases in biology. Applicants should have a Ph.D. either in mathematical sciences, computer science, biology, or engineering. The position is aimed to bridge between different disciplines, and the successful candidate must demonstrate outstanding research accomplishments and potential in the field.

The position is a part of the University-wide Cornell Genomics Initiative at Ithaca (http://genomics.cornell.edu) and a tri-institutional collaboration (Rockefeller, Sloan Kettering, and Cornell/Weill Medical College) in Computational Biology. The department of the appointment at the Cornell Ithaca campus is open and will be decided based on the interests and the qualifications of the successful candidate.

Position open until filled; review of applications to commence on November 15, 2001.

How to Apply: Mail CV, list of publications, statement of research interest, and the names of at least three referees who are familiar with your work to:

CORNELL
Ms. Helene Croft
Department of Computer Science
Upson Hall 4130
Ithaca, NY 14853

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

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

Faculty Positions
Department of Biological Sciences

The Department of Biological Sciences at **Dartmouth** seeks applicants for two tenure track positions, open at all levels, in the broadly defined area of **Cellular and Molecular Biology**. One position will be filled by an individual whose area of research is **Biochemistry/Cell Biology** and the other by an individual whose area of research is **Genetics/Developmental Biology**. The successful candidates will be expected to supervise independent research programs that will attract extramural funding and provide research training for graduate and undergraduate students. The candidates will join a group of faculty whose research involves cellular, biochemical and genetic approaches to studying problems in a number of model plant, fungal and animal systems. Candidates should expect to participate in teaching at the undergraduate and graduate levels. Send a current curriculum vitae, a statement of research and teaching interests, a list of referees (including FAX numbers and e-mail addresses), and arrange to have at least three letters of reference sent under separate cover to: **Cell/Molecular Search Committee, Department of Biological Sciences, Dartmouth College, Hanover, NH 03755-3576**

A separate application for each position is not necessary. Although materials can be submitted by FAX (603-646-1347), note that the original documents are ultimately required. Application review will begin on October 15, 2001 and continue until the positions are filled. For further information about the department and graduate program, see http://www.dartmouth.edu/~biology/

Women and members of minority groups are strongly encouraged to apply. Dartmouth College is an Equal Opportunity/Affirmative Action Employer.

What You Do **today**
changes lives **tomorrow.**

Cellular & Molecular Physiology Laboratory Openings:

SENIOR ANIMAL RESEARCH & RESOURCE COORDINATOR

In this full-time position you will be responsible for coordinating the acquisition and breeding of animals, managing housing for several colonies of experimental mice, determining project requirements and experimental protocols, the genotyping of animals and generating of transgenic mice.

Must have B.S. in Animal, Veterinary or Biological Science, Master's degree preferred. 2-3 years' relevant work experience, experience with molecular biology techniques preferred. Valid driver's license required and AALAS certification preferred, but not required.

RESEARCH ASSISTANT (A)

The Research Assistant is responsible for basic animal husbandry, the acquisition of tail biopsies from animals and preparation of genomic DNA from tail biopsies, genotyping of animals, assisting with physiological and biochemical experiments on transgenic animals, assisting with general molecular biology experiments and analysis of data.

Undergraduate degree in Biology or a closely related field is required, experience in basic molecular biology techniques and handling of small lab animals is preferred. Experience in islet isolation from mice and culture of freshly isolated islets is desired.

Joslin Diabetes Center
An affiliate of Harvard Medical School

Joslin offers a competitive compensation and benefits package. Please send your resume and cover letter to: **Marilynn Busby, Joslin Diabetes Center, Human Resources, One Joslin Place, Boston, MA 02215; Phone: (617) 732-2595; Fax: (617) 732-2553; E-mail: Marilynn.Busby@joslin.harvard.edu.**
Diverse lives create powerful ideas: EOE.

www.joslin.org

EXECUTIVE DIRECTOR INSTITUTE OF FOREST BIOTECHNOLOGY

The newly established Institute of Forest Biotechnology seeks founding Executive Director. Not a site for research, the Institute is a 501C3 private nonprofit corporation working for societal, ecological, and economic benefits from appropriate uses of biotechnology in forestry worldwide. It emerged from the recognition by research, policy, public interest, and corporate parties that unfolding of forest biotechnology requires a credible catalyzing entity. Activities address three broad areas: science and research needs, policy, and societal implications. The Institute will forge innovative partnerships and engage diverse voices. It is currently located at the North Carolina Biotechnology Center. The Executive Director will be administrative, developmental, and policy leader and must display detailed familiarity with public policy, science, and technology issues of biotechnology, forestry, or a closely related field in the public or private sectors; 10 years of administrative experience; exceptional communication and fundraising skills; imagination; and proven ability to craft consensus and effective action among diverse parties. Salary is $115,000 to $132,000. For further information or to address letters of application: **Ms. Susan McCord, Project Manager, Institute of Forest Biotechnology, 15 T.W. Alexander Drive, P.O. Box 13399, Research Triangle Park, NC 27709 U.S.A. Telephone: 919-549-8889**. Review of applicants will begin October 22, 2001, and continue until a suitable candidate is identified. Job description and other content at **website: http://www.forestbiotech.org**.

ASSISTANT/ASSOCIATE PROFESSOR MOLECULAR BIOLOGY/GENETICS

The Department of Biological Science, Florida State University, is seeking to fill a tenure-track faculty position in the broadly defined area of molecular biology and genetics. The successful candidate will be expected to establish a vigorous research program in an area of molecular biology/genetics that complements existing strengths within the Department in developmental biology/gene expression, cellular dynamics, motility/contractility, neuroscience, and evolution. The Department of Biological Science maintains a broad range of state-of-the-art core facilities. Teaching will be at the graduate and undergraduate levels.

Candidates for Assistant Professor must have significant postdoctoral training and a record of productivity. Candidates for Associate Professor must have a distinguished track record. Send curriculum vitae, statement of research interests, two selected reprints, and have three letters of reference sent to: **Molecular Biology/Genetics Search Committee, Department of Biological Science, Florida State University, Tallahassee, FL 32306-1100**. To receive full consideration, applications must be received by November 12, 2001. For more information, see **website: http://www.bio.fsu.edu** or **mbgsearch@bio.fsu.edu**.

Florida State University is an Equal Opportunity/Affirmative Action Employer committed to diversity of hiring and a Public Records Agency.

A **POSTDOCTORAL POSITION** is available to study the role of Lsh (a member of the SNF2 family) in mice; requires a strong background in molecular and cellular biology. Must have a Ph.D. with less than five years of postdoctoral experience. Send curriculum vitae and three reference letters to: **Kathrin Muegge, SAIC, Laboratory of Molecular Immunoregulation, National Cancer Institute, Building 469, Frederick, MD 21702. E-mail: muegge@mail.ncifcrf.gov**.

POSITIONS OPEN

PLANT MOLECULAR BIOLOGISTS THE OHIO STATE UNIVERSITY

The Plant Molecular Biology/Biotechnology Program (PMBB) at The Ohio State University is seeking applicants for tenure-track faculty positions at the **ASSISTANT PROFESSOR** level. PMBB is a campus-wide, interdepartmental/intercollege program composed of faculty that conduct research and train graduate students/postdoctoral individuals in fundamental and applied aspects of plant science. One position will be in the Department of Plant Biology and a second position is pending approval in the Department of Horticulture and Crop Science. We seek candidates that broaden our current research expertise and stress fundamental or applied molecular-based studies. Areas include signal transduction mechanisms and development; plant physiology/biochemistry; genomics; and metabolic engineering as well as proteomic and genomic approaches to enhance value-added traits of plants related to but not limited to pharmaceuticals, nutraceuticals, carbon sequestration and global warming, or resistance to biotic and abiotic stresses. Postdoctoral experience and a record of excellence in research are required. The successful candidates are expected to establish a strong and creative research program supported by extramural funding and will be expected to participate in departmental teaching. Please submit curriculum vitae, a concise statement of research plans and a description of teaching experience and interests, and arrange to have three reference letters sent to: **Dr. Randy Scholl, c/o Beth Witkowski, PMBB Search Committee, College of Biological Sciences, 105 BioSciences Building, The Ohio State University, 484 West 12th Avenue, Columbus, OH 43210-1292**. Review of applications will begin December 1, 2001. For more information, visit the PMBB **website: http://www.ag.ohio-state.edu/~pmbb/**.

The Ohio State University is an Equal Opportunity/Affirmative Action Employer. Qualified women, minorities, veterans, and individuals with disabilities are encouraged to apply.

MOLECULAR BIOLOGIST/ IMMUNOLOGIST

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

Applications will be accepted until the position is filled. Interested candidates should submit curriculum vitae, the names of three references, and a one-to-two-paragraph statement of research interests by October 31, 2001:

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

UAB is an Equal Employment Opportunity Employer.

RESEARCH ASSOCIATE Coriell Institute for Medical Research

To initiate and carry out a controlled mouthwash DNA research program to define and optimize the collection of high-quality DNA from a trial group of individuals so that subsequent collection from a wider population will be maximally effective. Ph.D. degree. Send résumé and three references to: **C. Tule, Coriell Institute for Medical Research, 403 Haddon Avenue, Camden, NJ 08103. FAX: 856-964-0254; e-mail: ctule@cimr.umdnj.edu**. *Affirmative Action/ Equal Opportunity Employer.*

POSITIONS OPEN

The U.S. Department of Agriculture, Agricultural Research Service, Plant Service Institute, Fruit Laboratory, in Beltsville, Maryland, is seeking applications for a **RESEARCH PLANT PATHOLOGIST**, GS-0434-12/13. Salary is commensurate with experience (GS-12: $53,431 to $69,456; GS-13: $63,538 to $82,605 per annum) plus benefits. *Candidates must be U.S. citizens.* The incumbent will be responsible for developing classical and molecular approaches to obtain blueberry and cranberry disease control. Specific objectives include (1) studying blueberry and cranberry plant/fungal interactions when the plant is infected with either *Colletotrichum acutatum, Botryosphaeria corticis*, or *Monilinia vaccinii-corymbosi* or related cranberry pathogens; (2) using available and/or novel methodology to develop effective and efficient approaches to evaluate potential blueberry parents and progeny for resistance to one or more of the above pathogens; (3) studying genetic and epidemiological factors influencing disease development; and (4) developing efficient, effective, economical, and environmentally sound disease control methods.

Candidates must request a copy of the Vacancy Announcement (ARS-X1E-1535) by either calling **Telephone: 301-504-1482** or by copying the full text announcement from the ARS **website: http://www.ars.usda.gov**. Candidates must submit specific information as outlined in the Vacancy Announcement. Applications must be postmarked by the closing date of November 13, 2001. *USDA/ARS is an Equal Opportunity Provider and Employer.*

RESEARCH INSTRUCTOR

The Division of Geographic Medicine is seeking a new faculty member to address issues related to STD/HIV prevention research and training. Current faculty interests include malaria, toxoplasmosis, filariasis, onchocerciasis, HIV, pneumocystis, arboviruses, bluetongue virus, and other opportunistic infections. This is a full-time, nontenure-track faculty position. We are seeking applicants with experience in international health, HIV/STD prevention research in international settings, and experience managing international training and research programs. Graduate training in epidemiology and international health and experience in student project supervision is highly desirable. The incumbent will assume the direction of several international training and research programs at UAB and will be expected to be fully grant funded during their UAB employment. Expected start date is October 1 2001. Interested applicants should contact:

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

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

A **POSTDOCTORAL POSITION** is immediately available to study angiogenic and antiangiogenic factors that affect ocular neovascularization. The position requires a person with training in molecular and cell biology and experience in histology, imaging, animal models, gene transfer, and vascular biology. Interested candidates should send (FAX or e-mail) their curriculum vitae and contact information (e-mail addresses and telephone numbers) for three references to: **Dr. Sheldon Miller, Department of Molecular and Cell Biology and Vision Science Graduate Program, 360 Minor Hall, University of California, Berkeley, CA 94720-2020. FAX: 425-952-0627; e-mail: smiller@socrates.berkeley.edu; website: http://mcb.Berkeley.edu/faculty/cdb/millers.html**.

NEUROBIOLOGY
University of California at Berkeley

The Department of Molecular and Cell Biology is seeking applications for a faculty position in Neurobiology at the level of Assistant (tenure-track) Professor. The research emphasis sought is in the area of cellular, molecular, or developmental neurobiology. The appointee is expected to join the faculty beginning July 1, 2002, or thereafter. Applicants should have demonstrated excellence, originality, and productivity in research, as well as an interest in undergraduate and graduate education. Applications should include a curriculum vitae, bibliography, a brief description of research accomplishments, a two-page statement of research objectives and teaching interests, and reprints of the three most significant publications. Please arrange to have three letters of reference sent to:

Department of Molecular and Cell Biology
Chair, Neurobiology Search
University of California
401 Barker Hall #3202
Berkeley, CA 94720-3202

Applications must be received by **December 1, 2001**.

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

ANNOUNCEMENTS

Institute for Mathematical Sciences
National University of Singapore

POST-GENOME KNOWLEDGE DISCOVERY

The Institute for Mathematical Sciences, newly formed in July 2000, will hold its second program from January to June 2002.

The program, which is on Post-Genome Knowledge Discovery, will focus on the computational and statistical analysis of sequence and genetic data and the mathematical modeling of complex biological interactions. It is intended to bring together biologists, bioinformaticians, computer scientists, mathematicians and statisticians for interaction and exchange of knowledge and ideas.

The program topics are:

1. Sequence and gene expression analysis (Jan – Feb 2002)
2. Population and statistical genetics (Mar – Apr 2002)
3. Protein interaction and clinical data analysis (May – Jun 2002)

The Institute invites applications for Membership for participation in the above program. Limited funds are available to cover travel and living expenses to young scientists. Application should be received at least (3) months before the commencement of membership.

More information and application forms are available from:

http://www.ims.nus.edu.sg
or by writing to:
Secretary, Institute for Mathematical Sciences
National University of Singapore
3 Prince George's Park
Singapore 118402, Republic of Singapore

THE UNIVERSITY OF WESTERN ONTARIO
Department of Plant Sciences

ECOLOGIST. The Department of Plant Sciences at The University of Western Ontario invites applications for a Probationary (tenure-track) **ASSISTANT PROFESSOR** in Ecology, beginning July 1, 2002.

The successful applicant's research interests should be in the areas of ecology, evolution or systematics of plants and/or microorganisms at the organism, population, community or ecosystem level.

The preferred applicant will have a Ph.D. and appropriate postdoctoral training or equivalent experience and a proven track record including publications of high quality. They will be expected to develop a vigorous and innovative research program, well supported by external funding. The applicant should also have the ability to work well with others and provide evidence of ability in teaching, conveying enthusiasm and ideas that will excite and inspire students, and to contribute to the department's commitment to excellence in both undergraduate and graduate education.

All exceptional candidates are encouraged to apply. Further information about the position, the department and the University can be found at **http://www.uwo.ca/plantsci/department/**.

Applications including a curriculum vitae and copies of recent significant papers should be forwarded to: **Dr. Charles Trick, Chair, Ecologist Search Committee, Department of Plant Sciences, The University of Western Ontario, London, Ontario, Canada N6A 5B7.** Please have three letters of reference sent directly to the Chair of the search committee. Applications will be reviewed starting November 15, 2001.

Position is subject to budget approval. The University of Western Ontario is committed to employment equity and welcomes applications from all qualified women and men, including visible minorities, aboriginal people and persons with disabilities. Canadian Citizens and Permanent Residents will be considered first for this position.

ANNOUNCEMENTS

THE ANGIOGENESIS RESOURCE CENTER

The Developmental Therapeutics Program (DTP, DCTD, NCI) has recently put into operation its Angiogenesis Resource Center. This effort was recommended by the Advisory Committee to the Director, NCI to facilitate research into the mechanisms of tumor angiogenesis and the development of drugs that target the essential tumor vasculature. The Center currently serves qualified investigators in the scientific community by providing human umbilical endothelial cells (HUVEC) and reference agents. Additionally, anti-angiogenesis testing is available without charge for pure natural products or synthetic compounds submitted by suppliers in universities, research institutes, government agencies, and pharmaceutical or biotechnology companies. For additional information on receiving any of these supplies and services, please visit our website at **http://dtp.nci.nih.gov** or contact the following individuals:

Mr. Richard F. Camalier
Biological Testing Branch
DTP, DCTD, NCI
Fairview Center, Suite 205
1003 West 7th Street
Frederick, MD 21701-8527
T: 301-846-5607
F: 301-846-6183
E: camalier@mail.nih.gov

Dr. Ravi K. Varma
Drug Synthesis and Chemistry Branch
DTP, DCTD, NCI
EPN, Room 831
6310 Executive Blvd.
Rockville, MD 20892
T: 301-435-9159
F: 301-480-4817
E: varmar@exchange.nih.gov

POSITIONS OPEN

MICROBIOLOGIST: The Department of Biology at The Citadel, Military College of South Carolina, invites applications for a tenure-track Microbiologist at the **ASSISTANT PROFESSOR** level. Candidates should possess a Ph.D. in microbiology with a specialization in environmental microbiology, microbial ecology, or microbial physiology preferred. Primary teaching responsibilities will include general microbiology at the undergraduate and graduate levels, undergraduate and graduate specialty courses in the candidate's area of interest, and participation in the Department's introductory biology courses. Candidates will be expected to develop an active research program involving undergraduates. Located in historic Charleston, South Carolina, The Citadel is a nationally recognized comprehensive college with a military format. The Department of Biology, consisting of nine permanent faculty members, provides a broad B.S. degree program for approximately 100 majors and 20 graduate students working toward the M.A. Ed. and MAT degrees and offers a Core Curriculum Science sequence for the corps of cadets. There are ample opportunities for collaborative research with state and federal agencies located in the Charleston area. Review of applications will begin immediately and will continue until the position has been filled. Materials including a letter of application; curriculum vitae; statements of teaching and research interests; and the names, telephone numbers, and e-mail addresses of three references should be sent to: **Human Resources, The Citadel, 171 Moultrie Street, Charleston, SC 29409. FAX: 843-953-5228**. You may also submit application and materials online at **website: http://hrweb.citadel.edu/jobs.cfm**. Please reference Job Number F01-17.

An Affirmative Action/Equal Employment Opportunity Employer dedicated to multicultural diversity in campus leadership positions.

FACULTY POSITION MOLECULAR GENETICS

The Department of Biological Sciences at Vanderbilt University seeks candidates to fill a rank-open, tenure-track or tenured faculty position in molecular genetics. We are especially interested in candidates studying replication, recombination, repair, protein or RNA targeting, cytoskeleton, or intracellular organization. The central criteria for this position are excellence in research and the ability to teach undergraduate and graduate students with a high level of effectiveness. For information about the Department, visit our **website: http://www.biosci.vanderbilt.edu**. Applicants should send a letter of application together with curriculum vitae, a statement of current and future research interests, and selected reprints to: **Molecular Genetics Search Committee, Department of Biological Sciences, Vanderbilt University, VU Station B 351634, Nashville, TN 37235-1634 U.S.A.** Junior faculty applicants should also arrange for three letters of recommendation to be sent to the same address. Senior faculty applicants should provide a list of at least six references that would be willing to provide letters on request. Review of applications will begin October 29, 2001, and will continue until the position has been filled. *Vanderbilt University is an Affirmative Action/Equal Opportunity Employer. Women and minority candidates are especially encouraged to apply.*

POSTDOCTORAL TRAINING in reproductive biology: NIH training grant position open immediately for a motivated Ph.D. or M.D. having expertise in modern cell and molecular biology techniques and an interest in the dissection of pathways important to the expression of developmental genes and the targets of their products in the adult male reproductive tract. *Applicants must be U. S. citizens or permanent residents.* Interested persons should contact: **Dr. Terry Turner, Department of Urology, University of Virginia School of Medicine, P. O. Box 800422, Charlotttesville, VA. E-mail: ttt@virginia.edu** for specific application requirements.

POSITIONS OPEN

U.S. Department of Agriculture, Agricultural Research Service, Avian Disease and Oncology Laboratory, East Lansing, Michigan, is seeking a permanent **RESEARCH GENETICIST/RESEARCH ANIMAL SCIENTIST** at the GS–12/13 level. The incumbent will contribute to a genomics unit working on resource development and the biology and control of avian tumor viruses with an emphasis on the identification of QTL, genes and/or pathways associated with viral disease resistance, oncogenesis, and vaccinal immunity in poultry. Individuals must have training and experience in genetics and preference will be given to those individuals with skills in molecular quantitative genetics, biostatistics, or immunogenetics. Ph.D. in genetics, molecular biology, animal science, immunology, or related area is required. Salary range is $51,927 to $80,279 with full benefits. *U.S. citizenship is required.* For research program information, contact: **Dr. Hans H. Cheng; Telephone: 517-337-6758; e-mail: hcheng@pilot.msu.edu**. To address specific qualification requirements and application instructions, applicants must request a copy of Vacancy Announcement ARS–X1W–1523R by calling **Telephone: 517-337-6825**; ARS **website: http://www.ars.usda.gov**. Applications must be postmarked by November 16, 2001. *The USDA is an Equal Opportunity Provider and Employer.*

COMPUTATIONAL BIOLOGY AND BIOINFORMATICS
The University of Michigan

The Departments of Mathematics and of Molecular, Cellular, and Developmental Biology solicit applications for a joint **TENURE-TRACK FACULTY POSITION** in computational biology and/or bioinformatics. We seek individuals who have established or show exceptional promise toward establishing a research program that applies methods of mathematical and/or computational science to fundamental questions in molecular biology. The successful candidate must have a Ph.D. in mathematics, biology, or related field as well as postdoctoral experience. The successful candidate will join a major expansion in life sciences research and education at the University of Michigan. The $200 million life sciences initiative is expanding faculty, buildings, and infrastructure in the life sciences and includes thrusts in bioinformatics and biocomplexity. In addition to establishing a successful research program, the candidate will be expected to participate in undergraduate and graduate teaching and curricular development. To apply, send curriculum vitae, copies of selected reprints, a brief summary of present research and future plans, and arrange to have three letters of recommendation sent to:

Chair, Computational Biology and Bioinformatics Search Committee
Department of Mathematics
University of Michigan
Ann Arbor, MI 48109-1109

Review of applications will begin November 1, 2001. *The University of Michigan is an Affirmative Action/Equal Opportunity Employer.*

RESEARCH STAFF ASSOCIATE

The Division of Digestive and Liver Diseases at The College of Physicians and Surgeons of Columbia University has an opening for a Research Staff Associate or **POSTDOCTORAL RESEARCH SCIENTIST** at a Master's or Ph.D. level. The candidate must have two years of documented experience in research and be proficient in a broad range of laboratory techniques of molecular biology, radioimmunoassay, protein electrophoresis, and ELISA and have experience in working with small laboratory animals. Submit curriculum vitae to: **Kaarel Laev, Administrator, Medicine/Digestive and Liver Diseases, Columbia University, 630 West 168th Street, Box 83, New York, NY 10032**. *Columbia University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

POSTDOCTORAL AND TECHNICAL POSITIONS
P450 Biochemistry, Genomics, and Bioinformatics, University of Illinois

Six Postdoctoral Fellow and three full-time/part-time technical positions are available at the University of Illinois at Urbana–Champaign on an NSF 2010 functional genomics project analyzing the expression patterns and substrate preferences of the 270-member *Arabidopsis* P450 gene family. One genomics Postdoctoral will concentrate on microarray analysis of P450 and networked pathway genes in response to chemical and environmental stresses. Other Postdoctorals will concentrate on expression of P450 cDNA clones in yeast and baculovirus systems as well as on incorporation of P450s into a membrane scaffolding system suitable for high-throughput screening of P450 substrate reactivities. One bioinformatics Postdoctoral will concentrate on construction of a Web-based P450 expression database including EST, microarray and substrate preference data, and integrated visualization of these data types. Postdoctoral positions require a Ph.D. degree in biochemistry, molecular biology, plant biology, functional genomics, or bioinformatics and are renewable for up to four years. Full-time/part-time technical positions require an M.S. or research experience in biochemistry/molecular biology. Principal Investigators (PIs) and co-PIs on this project include: **M. A. Schuler, S. G. Sligar, M. Band, L. Liu**, and **H. J. Bohnert**. Send current curriculum vitae, names and addresses of three references, and a short summary of professional goals to: **Ms. Cathy Paceley, Department of Cell and Structural Biology, 601 South Goodwin Avenue, Urbana, IL 61801 U.S.A. E-mail: paceley@life.uiuc.edu**. *The University of Illinois is an Equal Opportunity/Affirmative Action Employer.*

YALE UNIVERSITY SCHOOL OF MEDICINE

A **POSTDOCTORAL POSITION** is available to study structure/function of proteins related to neurodegeneration and aging. Applicants with experiences in protein biochemistry and interests in structural biology and neuroscience are encouraged to apply. Please send curriculum vitae to: **Ya Ha, Department of Pharmacology, Yale University, 333 Cedar Street, New Haven, CT 06520. E-mail: ha@crystal.harvard.edu**.

JOHNS HOPKINS ONCOLOGY CENTER

A **POSTDOCTORAL POSITION** is available to study the regulation and role of FLT3, a receptor tyrosine kinase often mutated in leukemia. A good background in cellular and molecular biology is required. 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. Telephone: 410-614-0994; FAX: 410-955-8897; e-mail: donsmall@jhmi.edu**.

POSTDOCTORAL POSITIONS immediately available to study mechanisms of alterations in ion channel function/expression in diseased heart. Ph.D. or equivalent and experience in molecular biology, electrophysiology, and/or biochemistry required. Send curriculum vitae, reprints/abstracts, and three names of references to: **Dr. Gea-Ny Tseng, Department of Physiology, Virginia Commonwealth University, P.O. Box 980551, Richmond, VA 23298. E-mail: gtseng@hsc.vcu.edu**. *Equal Opportunity Employer.*

POSTDOCTORAL POSITION at the National Cancer Institute, Frederick, Maryland. Candidate must have a Ph.D. or M.D. education. Projects involve nuclear receptors, transcriptional regulation, and cytokine signal transduction. Proficiency in English writing/speaking are required. Submit curriculum vitae and three reference letters to: **Dr. William Farrar, Laboratory of Molecular Immunoregulation, NCI, P.O. Box B, Building 560, Frederick, MD 21702. E-mail: farrar@mail.ncifcrf.gov**.

DORIS DUKE
CHARITABLE FOUNDATION

INNOVATION IN CLINICAL RESEARCH AWARD

The Foundation is pleased to announce that the following individuals have been offered awards in 2001 to support innovative clinical research in cardiovascular diseases and blood disorders:

Sumeet S. Chugh, MD
Oregon Health Sciences University

J. Michael Di Maio, MD
University of Texas
Southwestern Medical Center

Robert E. Gerszten, MD
Massachusetts General Hospital

John A. Heit, MD &
Mariza de Andrade, PhD
Mayo Clinic Rochester, NY

Kirk Hogan, MD
University of Wisconsin
Medical School

Tohru Ikuta, MD, PhD
Boston University
School of Medicine

Steven O. Marx, MD, Columbia University, NY & **Roxana Mehran, MD**, Lenox Hill Hospital, NY

Richard G. Ohye, MD &
Caren S. Goldberg, MD, MS
University of Michigan

David T. Scadden, MD
Massachusetts General Hospital

David S. Siscovick, MD, MPH &
Deborah A. Nickerson, PhD
University of Washington

Lori A. Styles, MD &
Deborah A. Dean, MD, MPH
Children's Hospital Oakland

Qing Wang, PhD & Eric Topol, MD
Cleveland Clinic Foundation

Announcing the 2002 Innovation in Clinical Research Award competition:

The Doris Duke Innovation in Clinical Research Award supports novel approaches to clinical research and encourages multi-disciplinary collaborations. The award supports researchers working in **cardiovascular diseases and blood disorders.**

Clinical researchers with advanced degrees are eligible to apply for the award, which provides $100,000 per year for two years.

The full announcement and description of this award can be found on our Web site at http://ddcf.aibs.org.

SYMPOSIA

CONNECTING TO THE NANO WORLD

Hunter College of The City University of New York
Center for Study of Gene Structure and Function
sponsored by the National Institutes of Health
Research Centers in Minority Institutions Program

FRIDAY OCTOBER 19TH, 2001 9:00 A.M. - 5:00 P.M.
PAUL ALIVISATOS, *University of California at Berkeley*
DAVID WALT, *Tufts University*
MARK REED, *Yale University*
ANGELA BELCHER, *University of Texas at Austin*
PAULA HAMMOND, *Massachusetts Institute of Technology*
PAUL WEISS, *Penn State University*
JEREMY SANDERS, *Cambridge University*

NANO-SCIENCE IN A MEGA-CITY

SATURDAY OCTOBER 20TH, 2001 8:30A.M. - 5:00 P.M.
CHARLES M. DRAIN, Hunter College of CUNY
FOTIOS PAPADIMITRAKO-POULOS, University of Connecticut
RAY BAUGHMAN, University of Texas at Dallas
LOUIS BRUS, Columbia University
NADRIAN C. SEEMAN, New York University
PHAEDON AVOURIS, IBM
KRISHNAN RAGHAVACHARI, Agere Systems
JAMES BATTEAS, College of Staten Island

Cash awards for best student posters

ADMISSION IS FREE - NO REGISTRATION
68th Street at Lexington Avenue, NY City
For information contact Professor C. Michael Drain
E-mail: cdrain@shiva.hunter.cuny.edu

http://sonhouse.hunter.cuny.edu/ genecenter/conferences/symposium2001/

GRANTS

NCCAM
NATIONAL CENTER FOR COMPLEMENTARY AND ALTERNATIVE MEDICINE

Exciting Research Opportunities

The National Center for Complementary and Alternative Medicine (NCCAM), a component of the National Institutes of Health, explores complementary and alternative healing practices in the context of exacting science.

Having funded numerous clinical trials, NCCAM now seeks to expand its grants portfolio of research into the basic mechanisms underlying diverse CAM approaches, described at http://nccam.nih.gov.

Chemists, physicists, psychologists, neuroscientists, endocrinologists, immunologists, geneticists, pharmacologists, and others in relevant fields of inquiry who are interested in applying their expertise and powerful contemporary technologies to help advance the science of CAM should contact Neal West, Ph.D., at 301.496.4792 or westn@mail.nih.gov.

ASSISTANT PROFESSORSHIPS AND POSTDOCTORAL FELLOWSHIPS IN NEUROSCIENCE

The Louisiana State University Health Sciences Center Neuroscience Center of Excellence is recruiting at least two Assistant Professors in the areas of synaptic physiology and molecular neurobiology. These independent Neuroscientists will complement the Scientists and interests below. The Center is housed in a new facility that includes 36,000 square feet of research space. Well-equipped, state-of-the-art laboratories and core resources are still expanding (e.g., tandem MS, multiphoton confocal microscope). The Neuroscience Center is home to a highly competitive, interdisciplinary Ph.D. program. Faculty members hold primary appointments in various Departments of the LSUHSC School of Medicine and receive attractive start-up packages. In addition, several other Neuroscientists with laboratories throughout the LSU Health Sciences Center campus and the University of New Orleans are jointly appointed in the Center. The wide range of joint appointments within the Center is broadly inclusive of both fundamental neurobiology and clinical neurosciences **(website: http://www.neuroscience.lsuhsc.edu)**.

Postdoctoral Fellowship opportunities are also currently available in the following areas: **Rene Anand:** nicotinic acetylcholine receptor-mediated signaling in neuronal plasticity and survival.

Haydee Bazan: cellular and molecular signaling in wound repair and angiogenesis.

Nicolas Bazan: lipid synaptic signaling and modulation of gene expression; neuronal survival and neurodegeneration in the hippocampus and retina.

Chu Chen: neuromodulation of ionic channels and synaptic plasticity in hippocampal neurons.

Jeffrey Erickson: molecular and cellular biology of vesicular neurotransmitter transporters.

Walter Lukiw: Alzheimer's disease, neurotoxicology, and gene transcription.

Jeffery Magee: dendritic integration and synaptic physiology.

Anthony Ricci: single-cell physiology investigating calcium regulation of excitability in auditory sensory cells.

Helene Varoqui: role of glutamine transporters in glutamatergic neurotransmission.

Faculty applicants should submit curriculum vitae, a three-to-five-page research plan (Postdoctoral candidates should send a description of their accomplishments up to today and aspirations), and names with full addresses (including e-mail) of three to four references. Send applications to: **Nicolas G. Bazan, M.D., Ph.D., LSU Neuroscience Center, 2020 Gravier Street, Suite D, New Orleans, LA 70112.** *LSU Health Sciences Center is an Equal Employment Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITIONS
Protein Translation

NIH-funded positions are available immediately to study the mechanism of stress-induced translational arrest and to determine its role in autoimmune disease (see *EMBO J.* **19**:4154). Candidates should have a strong background in biochemistry, molecular biology, or immunology. Please send curriculum vitae and names of three references to: **Paul Anderson, M.D., Ph.D., Harvard Medical School/Brigham and Women's Hospital, Smith 652, One Jimmy Fund Way, Boston, MA 02115. E-mail: panderson@rics.bwh.harvard.edu.**

POSTDOCTORAL POSITION MOLECULAR NEUROPHARMACOLOGY

A position is available within the NIH Intramural Research Program for investigating the cellular and molecular characteristics of dopamine receptors. See **website: http://intra.ninds.nih.gov/Lab.asp?Org_ID=67** for further information on research. Candidates should have received their Doctorate degree within the past five years and have experience in molecular and/or pharmacological techniques. Please send cover letter and curriculum vitae to: **Dr. David R. Sibley; e-mail: sibleyd@ninds.nih.gov.**

POSITIONS OPEN

NIH 2001 = [OPPORTUNITY]^N

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

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

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

Two **POSTDOCTORAL POSITIONS** in molecular biology and one in neuroethology. Rockefeller University is located on Manhattan's Upper East Side, neighbored by three other world-class scientific institutions and within walking distance to many fine shops and museums. University housing is available for Postdoctoral Researchers. Three immediate openings: (1) Postdoctoral Researcher interested in screening for molecular variables involved with neuronal replacement in the juvenile and adult brain with particular relation to vocal learning. Strong training in molecular biology required. (2) Postdoctoral Researcher with experience in molecular biology, cell sorting, tissue culture, and laser capture microscopy. The aim will be to understand why neurons are replaced. (3) Postdoctoral Researcher with interests and experience in ethology, neurophysiology, general physiology, modeling, and computation. Candidate will be expected to develop a neurophysiology laboratory and record from single/multiple units in awake, behaving songbirds. This work will also interact with molecular approaches. Applications including curriculum vitae listing specific skills and experience, a statement of research interests, and the addresses and e-mail addresses of three individuals familiar with the applicant's work should be sent to: **Professor Fernando Nottebohm, Rockefeller University Field Research Center, 495 Tyrrel Road, Millbrook, NY 12545. FAX: 845-677-6491; e-mail: nottebo@rockvax.rockefeller.edu.** *Equal Opportunity Employer.*

POSTDOCTORAL/RESEARCH ASSISTANT PROFESSOR positions in cancer causation and prevention are available to study the interactions of genetic and environmental factors in tumorigenesis. Projects include (1) transgenic rat models to study the role of cytotoxicity in tumor promotion (experience in molecular biology and protein expression required), (2) functions of polymorphic P450 1B1 proteins (experience in HPLC/EC detection required) and (3) microarray analysis in preclinical drug evaluation (experience in RNA isolation/hybridization and PCR analyses required). You will work in a newly renovated, 3,000-square-foot laboratory with extensive molecular biology instrumentation. Positions have competitive salaries and benefits. Interested individuals should provide their curriculum vitae and a list of three references to: **Dr. Thomas R. Sutter, Feinstone Center for Genomic Research, University of Memphis, 201 Life Sciences Building, Memphis, TN 38152-3560. E-mail: genomics@cc.memphis.edu.** *The University of Memphis is an Equal Opportunity/Affirmative Action Employer.*

The Anticancer Agents Pharmacology Laboratory at Institut Bergonié of Bordeaux Cancer Center (France) is opening a two-year CNRS **POSTDOCTORAL POSITION**. The non-French Ph.D. candidate must have a strong background in molecular biology or molecular pharmacology. He/she will investigate new potential mechanisms of resistance to topoisomerase inhibitors using a genetic approach based on the selection of genetic suppressor elements and participate in the functional characterization of the newly identified genes. This project has recently been granted with a CNRS fund. The candidates will send curriculum vitae plus a letter of motivation before November 30, 2001, to: **Dr. Philippe Pourquier, Institut Bergonié, 229 cours de l'argonne, 33076 Bordeaux Cedex, France. E-mail: pourquier@bergonie.org.**

POSITIONS OPEN

POSTDOCTORAL POSITIONS
Functional Genomics and Neurodegenerative Diseases

Genetics of prion disease susceptibility: The goal of this program is to identify genes (in addition to the prion protein gene) that modify susceptibility to prion infection or that are involved in prion replication. Interactions with coinvestigators at larger research centers in Seattle (**L.E. Hood**) and San Francisco (**S.B. Prusiner**) enhance the training environment. Successful applicants will have a solid background in molecular biology.

Application of mouse genetics to Alzheimer's disease: Genetic approaches using transgenic mice overexpressing Alzheimer's disease-associated genes are aimed at dissecting pathogenic mechanisms and developing better disease models. Outstanding expertise in behavior and molecular genetics (**K. Hsiao Ashe**), biochemistry (**S.G. Younkin**), pathology (**B. Hyman**), electrophysiology (**P. Chapman**), and vascular physiology (**C. Iadecola**) is provided by our collaborators. Expertise of the successful applicant may be in cell biology, neuroscience, or molecular biology.

Functional genomics/mutagenesis: Sensitized screens will target mutations affecting hearing, ear development, or neurodegeneration. The successful applicant will be involved in all aspects of an ENU-mutagenesis program and, as the program develops, will choose an area of focus for independent research with one or more of the Institute's Investigators (**J.R. Bermingham, Jr., G.A. Carlson, J.A. Mercer, P.X. Xu, and X. Xu**. See **website: http://www.montana.edu/wwwmri**). Expertise of applicants should include previous experience in mouse biology or genetics.

McLaughlin Research Institute is a small nonprofit research organization near the east slopes of the Rocky Mountains and provides an outstanding environment to train for a career in mammalian genetics. Applicants for these positions should provide evidence (including publication in reputable journals) for their potential for an independent research career. To apply, send your curriculum vitae, a statement of research interests, and the names of three individuals we may contact for references to:

George A. Carlson, Ph.D.
McLaughlin Research Institute
1520 23rd Street South
Great Falls, MT 59405
E-mail: gac@po.mri.montana.edu

POSTDOCTORAL POSITIONS
Center for Surface Biotechnology Uppsala University, Sweden

Applications are invited for two Postdoctoral positions. The successful candidates will be involved in a strongly interdisciplinary biomimetic project (**website: http://www.physto.se/~biomim/**) that aims to develop biocatalytic surfaces where SPM, UHV-STM, XPS, and different lithographic techniques are the techniques to be used. The biomimetic project is funded by the Strategic Research Fund (**website: http://www.stratresearch.se**) until July 2005. For further details on the positions and information on how to apply, please send a postcard with your name, address, and job reference (Biomimetics) to: **Professor Sven Oscarsson, Center for Surface Biotechnology, Box 577, SE-75123, Uppsala, Sweden. E-mail: sven.oscarsson@ytbioteknik.uu.se.**

Functional genomics **POSTDOCTORAL POSITIONS** as part of an interdisciplinary research team using advanced FISH, microarray, real-time, and computational technologies to determine how chromatin structure regulates gene expression. Self-motivated individuals trained in molecular biology, genetics, and/or biochemistry are encouraged to apply. Applicants should forward their curriculum vitae and three letters of reference to: **Dr. S. A. Krawetz, C.S. Mott Center for Human Growth and Development, Wayne State University School of Medicine, 275 East Hancock, Detroit, MI 48201. E-mail: steve@compblo.med.wayne.edu.** *WSU is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

POSTDOCTORAL POSITION
Molecular Genetics of Growth Control
Juvenile Diabetes

Postdoctoral positions are available to study the molecular mechanisms that regulate proliferation and cell death in human pancreatic β-islet cells. This research project is part of a larger multilaboratory effort aimed at developing gene therapy approaches to the treatment of juvenile diabetes. We seek highly motivated individuals with a recent Ph.D. in molecular/cell biology, genetics, biochemistry, or a related science and a strong publication record. More information about the Department of Biological Sciences at the University of Pittsburgh is available at: **website: http://www.pitt.edu/~biology**. Applicants should send curriculum vitae, short statement of research interests, and the names of three references to:

Dr. James M. Pipas
Professor and Chair
Department of Biological Sciences
University of Pittsburgh
Pittsburgh, PA 15260
U.S.A.

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

POSTDOCTORAL POSITIONS
FUNCTIONAL PROTEOMICS

The Functional Proteomics Laboratory at The University of Texas Southwestern Medical Center in Dallas, Texas, is recruiting enthusiastic Scientists to take key roles in developing and implementing proteomics technologies for the studies of signal transduction and cancer biology: (1) identification and validation of cancer-specific protein markers for early detection and diagnosis of the cancers and (2) implementing our newly developed methods for proteomics analysis of protein phosphorylations and protein-protein interactions in signal transduction. Ph.D. degree required with experience in the areas of cancer biology, biochemistry, and/or molecular biology.

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

U.T. Southwestern is an Equal Opportunity Employer.

ANNOUNCEMENTS

FELLOWSHIP PROGRAM
SMITHSONIAN INSTITUTION

GRADUATE STUDENT, PREDOCTORAL, POSTDOCTORAL, and **SENIOR FELLOWSHIPS** in animal behavior, ecology, and environmental science including an emphasis on the tropics, Earth sciences and paleobiology, evolutionary and systematic biology, and history of science and technology. Tenable in residence at the Smithsonian facilities. Stipends and tenure vary.

Deadline: January 15 annually. Contact: **Office of Fellowships, Smithsonian Institution, Desk S, Washington, DC 20560-0902. Telephone: 202-275-0655; e-mail: siofg@ofg.si.edu; website: http://www.si.edu/research+study.**

An Equal Opportunity Employer.

New **BIOMOLECULAR MOTORS PROGRAM** sponsored by the Defense Advanced Research Projects Agency (DARPA). The DARPA Biomolecular Motors initiative seeks to develop an understanding of the fundamental operating principles of biomolecular motors and exploit this knowledge to harvest, modify, and integrate these macromolecular assemblies into nano- to macroscale devices for defense applications.

For more information on the program and the conference to be held on October 22, 2001, see the following **website: http://www.darpa.mil/dso/solicitations.** Announcement BAA 01-47.

MARKETPLACE

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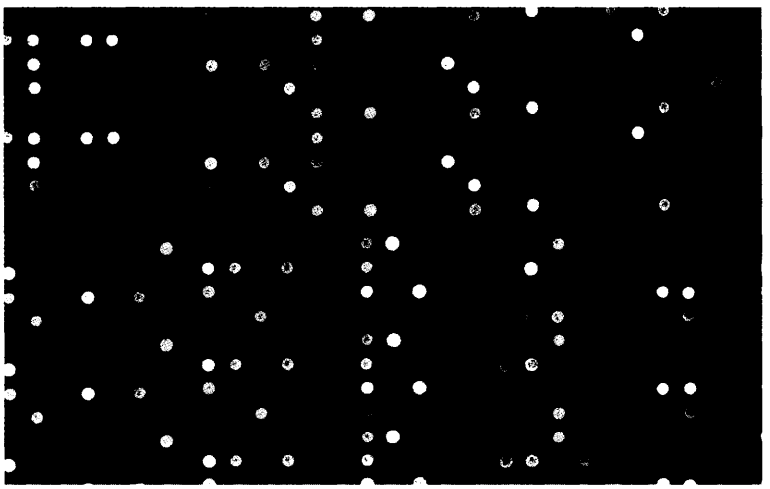

1µg human total RNA per channel labeled with Submicro Oligo kit

Introducing the first high performance oligo array labeling system. The sensitivity of Genisphere's new 3DNA Submicro Oligo labeling kit is profoundly easy to see. The truth is, it works so well, the results hardly look real. Even more impressive is the quality of the data the kit produces. High end differentials approach 100:1. Results are so reproducible that expression changes as small as 60% (excluding outliers, 40%) are meaningful to a 99% confidence level.* And the Submicro Oligo kit offers a fast, easy protocol and 3-channel detection capability.

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* For detailed Submicro Oligo data and data analysis, visit our website at: www.genisphere.com/oligo.html

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KODAK MDS 290

Section One: Analogies

1) Film is to the KODAK MDS 290 as

A) Typewriter is to Word Processor
B) Magnifying Glass is to Microscope
C) Abacus is to Calculator
D) Pony Express is to E-Mail
E) All of the Above

DIGITAL IMAGING 101

SCIENTIFIC COMPUTING READERS' CHOICE AWARDS 2001

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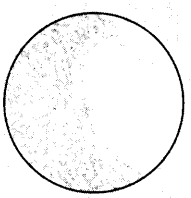
The above statement refers to comparison to film



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Correct Answer: E) All of the Above

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