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The effort to sequence the human genome has both relied on and stimulated new technologies, from rapid sequencing techniques to methods of handling huge amounts of data. Here, we examine the current achievements and near-term promise of the project. **by Peter Gwynne and Guy Page**

technologies in Genomic Research

A few years ago, the task of completing the entire DNA sequence of the human genome seemed monumental. Even optimists assumed that the work would stretch out far into the new millennium. Now, in the very first month of that millennium, the picture has changed dramatically. We can count the months until the complete book of *Genetica humana* will be ready to read. And we are beginning to see clearly some of the benefits that will stem from that extraordinary piece of literature. "This is a story that's not over," says Francis Collins, director of the National Human Genome Research Institute in Bethesda, Maryland. "Very exciting things lie ahead."

Exciting advances have already emerged. Less than two months ago, for example, participants in the international Human Genome Project (HGP) announced that they had completed a chapter of the book by mapping virtually an entire human chromosome for the first time. A week before that, the National Academy of Sciences held a celebration to mark the completion of one billion sequenced base pairs of DNA and their deposition into an international gene bank. That achievement represents about one-third of the entire complement of the human genome. On the very same day, an international collaborative group, the SNP Consortium Ltd., released about 2,300 newly identified and characterized single nucleotide polymorphisms (SNPs) into the public domain. These minute genetic variations in human DNA provide signposts on the human genome that will help scientists identify genes associated with diseases. In coming months, the international genome community expects advances such as these to occur at increasingly rapid rates.

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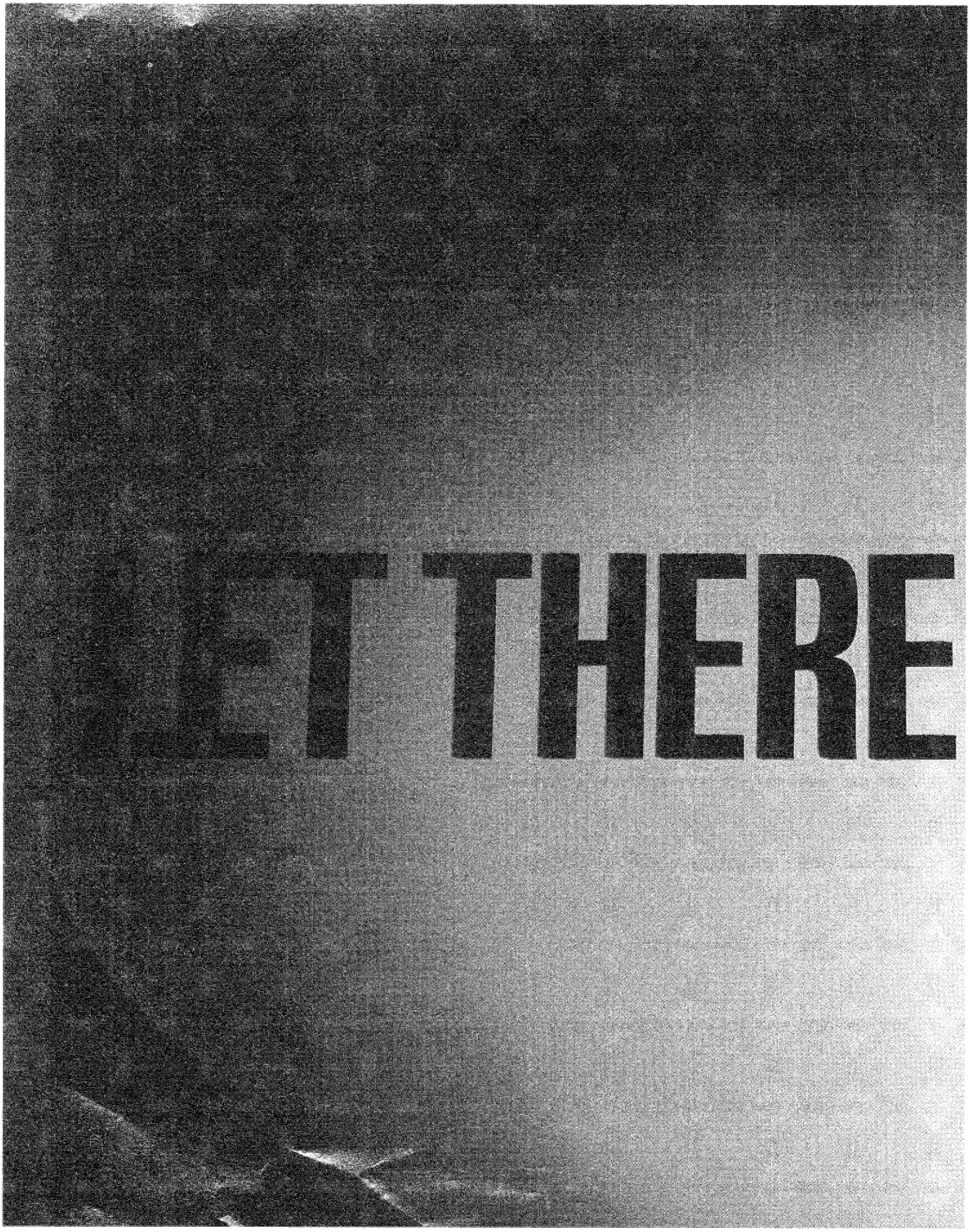
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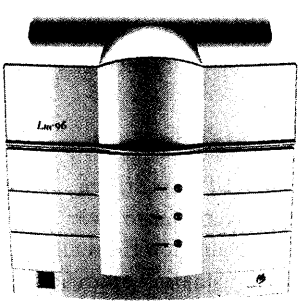

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The remarkably rapid progress of the human genome venture has pushed what began as philosophy into the realm of practicality. Many new issues have arisen and new scientific sub-disciplines have been credited as a direct result of the Human Genome Project and similar scientific ventures. Research teams have already started to test gene therapies based on the new understanding made possible by the HGP. Indeed, the extraordinary progress of human genome sequencing has opened up possibilities that were inconceivable when the project started just ten years ago.

At the time, sequencing a single genome was a truly daunting project. Now, life scientists have begun to focus on variations among different groups of individuals and different individuals themselves. These variances represent both the most fascinating and, because they can possibly help medical professionals to target treatments in individuals and groups of people, potentially one of the most practical outcomes of the genome project. But they are far from the only form of new technology and medical benefit likely to emerge from the work of the past decade. "In the longer term, one hopes to see the sequencing of single molecules become a possibility," says Collins. "Suddenly it's feasible to do immediately what we had thought about doing only five to ten years from now," adds John Donelson of the University of Iowa, who is participating in sequencing the genome of African trypanosome parasites.

In this report, we take stock of where the Human Genome Project is now, how it has reached its present state, and the immediate issues it has raised. In a further report, we will peer into the crystal ball to predict where the results of the project will lead the scientific and medical communities.

The Basic Technologies

Scientists in the HGP consortium, led by groups at the Sanger Centre near Cambridge, UK, and Washington University, St. Louis, use a painstaking approach to sequencing the human genome. They start with a mixture of sperm and blood cells from several volunteers. First, they divide the material into the 23 pairs of chromosomes that contain all human genes. Then, the teams remove sections of DNA from individual chromosomes, clone them using routine techniques, and separate the clones into individual matching pairs of DNA bases using gel electrophoresis, a process that divides molecules into groups of the same size by forcing them through pores in a thin layer of gel. By identifying each DNA base pair and matching them to the pairs on either side of them in the double helix, scientists gradually build up a sequence for gene segments, whole genes, complete chromosomes and, finally, the entire human genome. The approach moves step by step, carefully linking together the pieces of each chromosome genome, like assembling a jigsaw puzzle by starting at one corner and carefully moving out from that area.

A dramatic new approach emerged 20 months ago. J. Craig Venter, chief scientist and president of Celera — a biotechnology firm based in Rockville, Maryland and owned by PE Corporation — and his former colleagues at The Institute for Genomic Research (TIGR) in Rockville, Maryland started to use a short cut that, Venter claims, will help to sequence the human genome much faster and more cheaply than the HGP consortium. Instead of studying small segments of chromosomal material, Celera's shotgun approach shreds an organism's entire complement of genetic material into tiny pieces. After analyzing the pieces, scientists use powerful computers to pull together all the pieces of information into a recognizable whole. In effect, this approach aims to solve the jigsaw puzzle by throwing all the pieces on the table and figuring out where all should go simultaneously.

The method has progressed significantly since 1995, when TIGR scientists first used it to sequence the influenza genome. "With the first genome, calculations took on the order of 5 to 11 days," recalls Venter. "Now, with the help of Compaq's new Alpha chips and Compaq computers, we've reduced the calculation to under five minutes." A pilot project in which Celera scientists sequenced the genome of the fruit fly *Drosophila melanogaster* provided some validation of the shotgun method.

In some ways, the approaches are complementary. Celera's technology can identify a rather fuzzy forest of DNA base pairs on the human genome, while the more precise HGP methods can focus in on individual trees and their locations in the forest. The two groups have recently started to talk about collaborating. "Discussions have been going on for a while, and they are quite serious,"

Strength in Numbers

The remarkably rapid advance of the Human Genome Project has sparked progress in efforts to sequence the genomes of several other creatures. A typical example is the sequencing of the genome of the African trypanosome, a protozoan parasite that causes African sleeping sickness.

"The fact that the human genome work showed the feasibility of sequencing megabase stretches of DNA made us realize that the African trypanasome genome was well within the range of today's technology," says John Donelson of the University of Iowa, who coordinates an annual World Health Organization meeting on the work. "The major step over the past five years has been realizing that having the brute force of many sequencing machines working 24 hours a day can do the job."

The trypanosome project has borrowed from other sequencing efforts. "An advance in the yeast field has impacted on us: the demonstration that it's feasible to knock out systematically every gene of the organism once you know the genome," says Donelson. "It gives us a framework in which to try to identify the virulence genes in these parasites."

What's the message from that experience? "The bottom line for me is that you can't work on your organism unless you take account of all the other genome information that's out there," says Donelson, "You need to keep in touch with what's going on in all the genome work."

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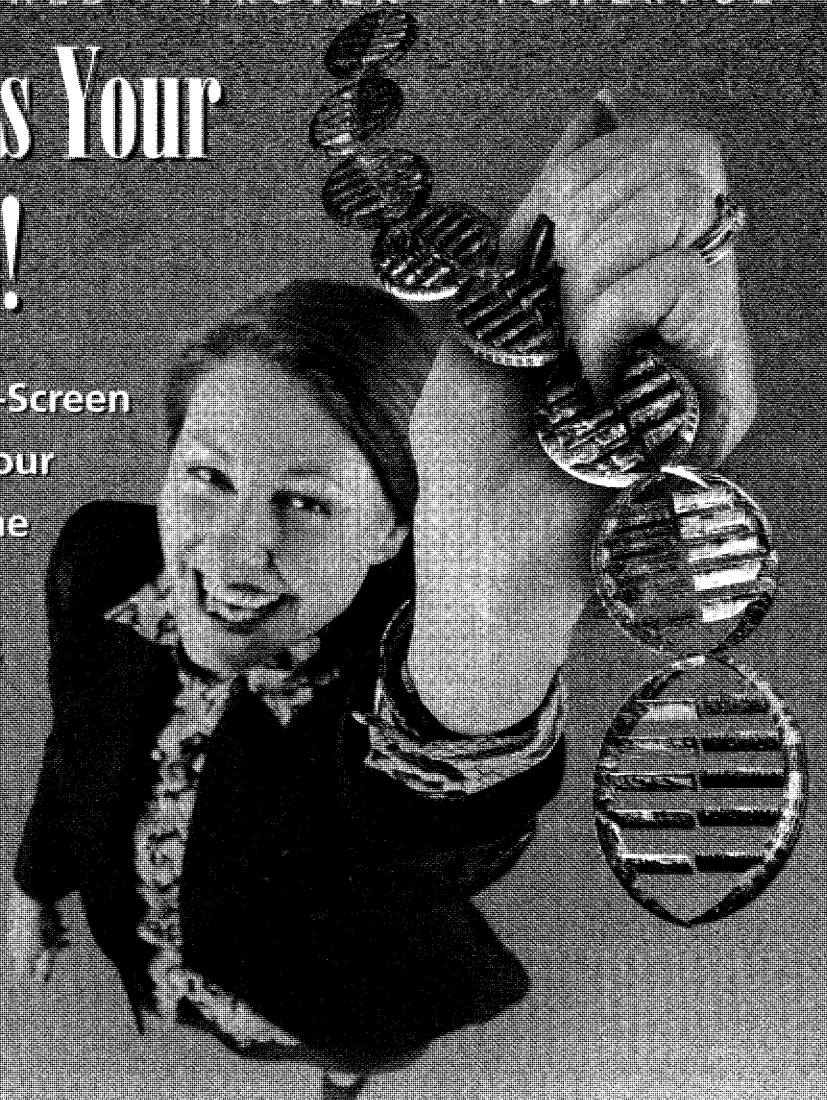

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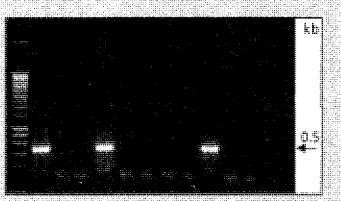

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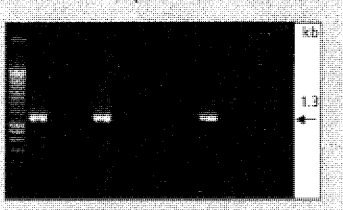

Alternate screen using the 3' vector-derived primer and a gene-specific forward primer to determine extent of 3' sequence

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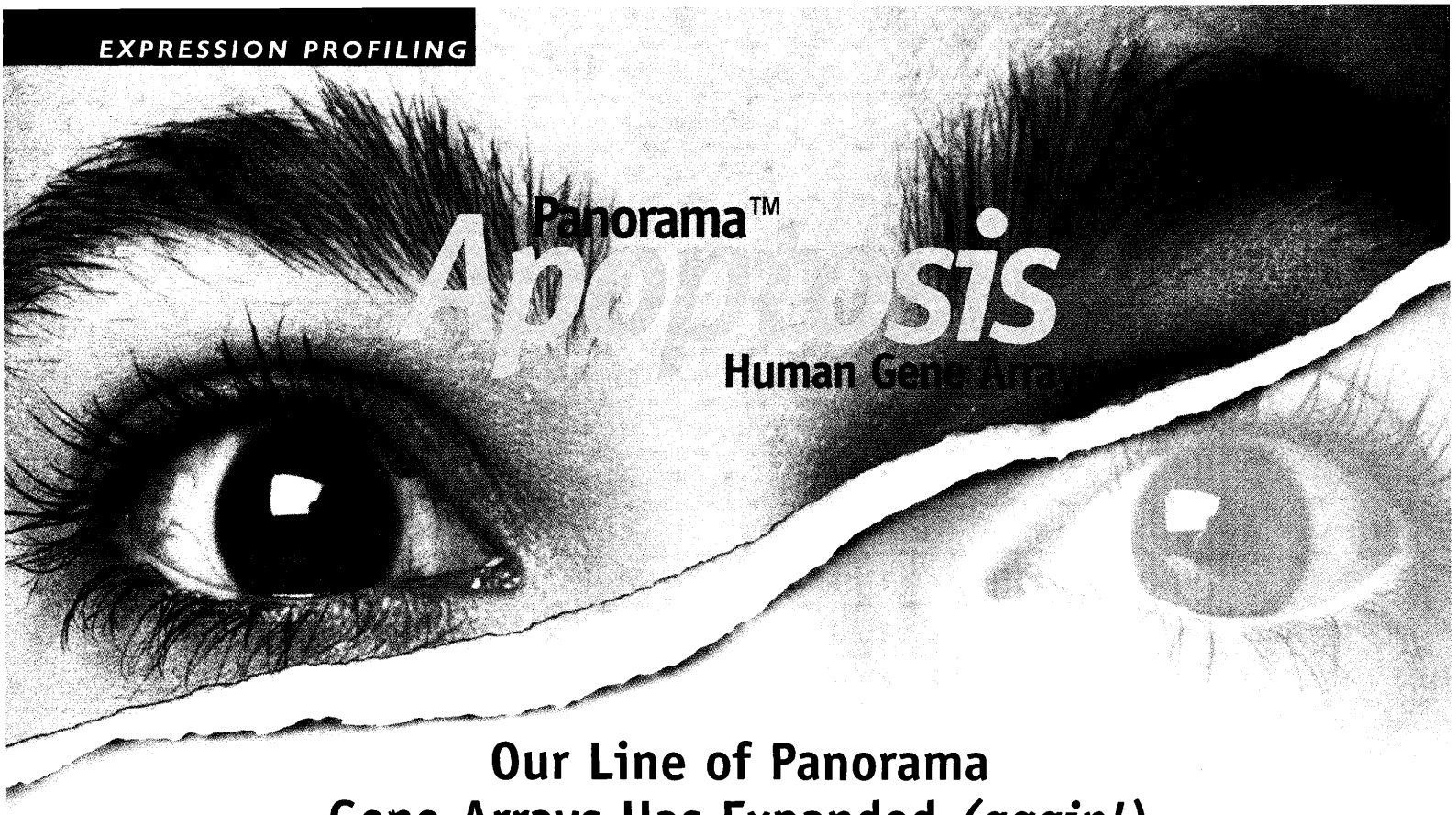

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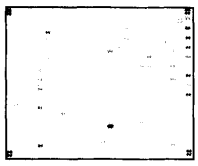

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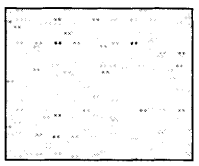

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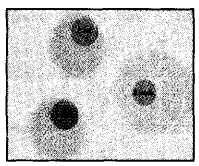

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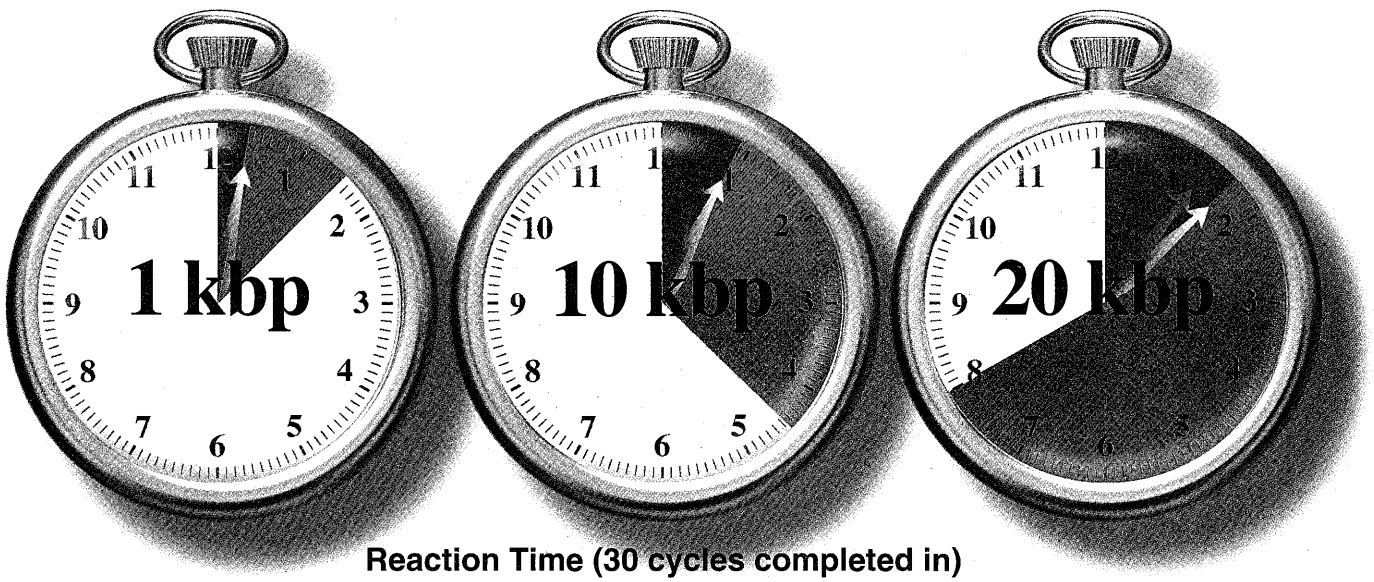

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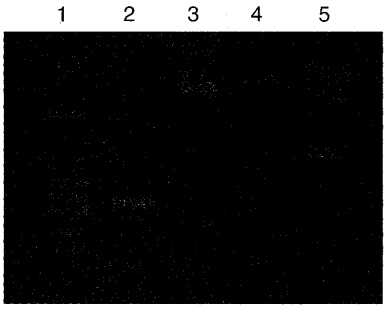

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says Collins. One potential roadblock concerns different attitudes toward making the results of research available to the scientific community. The HGP, as a publicly supported consortium, has a mandate to submit all its DNA data to a public data bank within 24 hours. Celera, a for-profit company that has benefited from the HGP's publicly available data, wants to hold on to potentially patentable information for longer periods. "The challenge is to come up with a model that recognizes the need to have all the data in the public domain," says Collins.

Iterative Advances

Taking the broad view, one of the most surprising facts about the entire effort to sequence the human genome is that it has accelerated far faster than its originators expected, despite the lack of breakthrough technologies. University of Wisconsin geneticist Fred Blattner, a pioneer in sequencing *E. coli* bacteria, likens the similarities between the sequencing technologies of 1990 and today to those between an automobile of the 1920s and a 2000 model car: The fundamentals scarcely differ.

"Very little has come up to beat the electrophoretic technique invented by (British biochemist and Nobel Laureate) Fred Sanger. The current capillary electrophoresis devices aren't very different from Sanger's gel-based method," Blattner points out. "When scientists started on some relatively small genomes, they invented random shotgun sequencing. That's the same now. Computer involvement has been extremely critical, but it was recognized in the first pieces of sequencing work. And the software functions involved in sequencing are similar. What has happened between the early days and now has been scaling up of the sequencing as more computing power has become available."

Rick Wilson, who heads the Genome Center at the Washington University, St. Louis, agrees. "It's been tough to rely on expected innovations, other than to say that we expect to have a ten percent increase in efficiency every year," he says. "Back in the late 1980s, many people said the human genome couldn't be sequenced without a major technological breakthrough. We weren't content to wait for that breakthrough. We relied on incremental technological advances. Every year we've managed to figure out a way to get more out of our sequencing machines."

Those ways have involved creative advances in technology, if not significant breakthroughs. Capillary-based instrumentation for sequencing, developed first by Amersham Pharmacia Biotech and then by PE Biosystems, for example, has given scientists who undertake gene sequencing the ability to collect as many as one million base pairs of raw data per day. "Capillary sequencing will have a major impact on the project's speed, because of labor considerations," says Wilson. The technology will continue to improve. "We're creating the next generation of DNA sequencers, which will increase throughput and decrease cost, each by an order of magnitude," says David Barker, vice president and chief science adviser for Amersham Pharmacia Biotech. "We're using microfabricated channels in a glass chip that allow sequencing of 500 bases in 15 minutes."

Another key advance has occurred in computing capability. "Life scientists have really underestimated the role of high-end computing in genomics," says Venter. "In sequencing the genome of the fruit fly, we used every bit of the capacity of the Celera supercomputer. Sequencing the human genome will be even more of a challenge."

Scientists in both the HGP and Celera feel confident that they can meet the challenge. After all, the public record shows that researchers have already sequenced about 30 genomes, of varying levels of complexity. Several scientists expect the total to reach 100 by the end of this year. Organisms already sequenced include *E. coli*, with roughly 4,500 protein-encoding genes, and yeast, with 6,000, sequenced by Ronald Davis of Stanford and a consortium of scientists in Britain and continental Europe. (In comparison, plants have roughly 20,000 protein-encoding genes, and humans have 100,000.) As a result of international archiving efforts, researchers around the world can regularly scan databases of DNA or protein sequencing.

Beyond DNA Sequencing

As iterative advances in sequencing technology have accumulated, they have started to change the goals of the HGP. The concept of "finishing the genome," for example, raises as many questions as it answers. Participants in the effort widely accept the fact that some chromosomal regions of the human genome will remain impossible to characterize; they are too repetitive and unstable to be unraveled by any sequencing technology. Fortunately, those regions seem to have relatively little significance in the genome's overall function.

A deeper issue involves the idea of the genome itself. As originally conceived, the HGP had the goal of sequencing a single genome representative of all humanity. Now, gene sequencers realize that much of the potential and excitement of the project lies in identifying differences between the genomes of groups of people and, eventually, between individual humans.

In that context, SNPs have come to play an ever more central role in human genetic analysis. Scientists do not know whether

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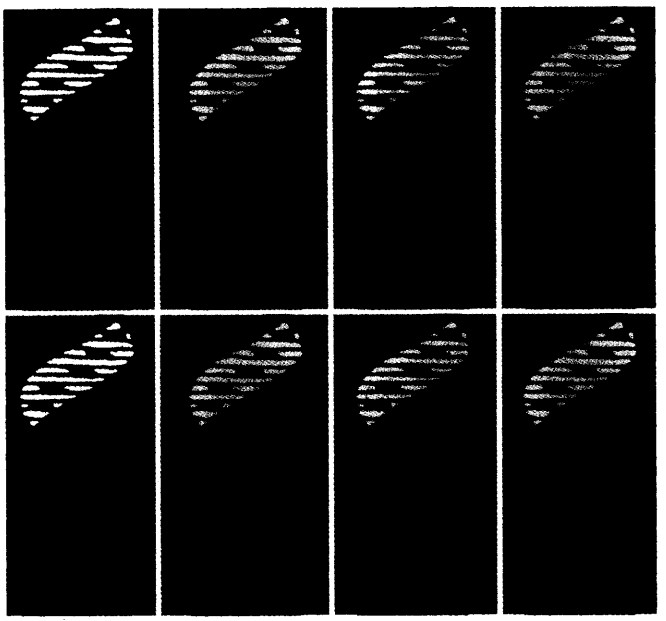

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these single-base variations in the DNA sequence, which are scattered throughout the genome, directly affect gene function. But they can use the variations as extremely effective tools for characterizing individuals or groups quickly and inexpensively.

Each human has a unique constellation of variations in our DNA base sequences. By using the polymerase chain reaction (PCR) in combination with other newly-minted techniques, scientists will be able to create a genetic pattern that uniquely identifies individuals or groups of individuals. "There's a great need to detect variations and to understand how they work in disease pathways," says Collin D'Silva, CEO of Transgenomic Inc.

In addition to defining such pathways, genetically defined characterizations have great potential for associating specific patterns defined by SNPs with manifest characteristics, such as responses to drug treatments. Thus, pharmaceutical companies could use SNP data to develop particularly effective treatments for small groups of individuals or to identify — and warn — individuals likely to suffer severe side effects from specific drugs.

The technology could also expand the pharmaceutical armamentarium. "Many drugs have not been certified by the United States Food & Drug Administration, because they have an adverse effect on some part of the population," explains Douglas Gjerde, Transgenomic's chief science officer. In principle, organizers of clinical trials could use SNP data to identify those segments of the population. Doing so could theoretically enable the FDA to approve specific drugs on the condition that they not be prescribed for individuals found to be vulnerable to the drugs on the basis of their genomes.

Not surprisingly, corporate laboratories have started to develop new means of tracing SNPs. Transgenomic, for example, has developed a chromatography-based technology that, the company says, detects SNPs rapidly and cheaply. "It's a DNA difference engine," explains principal scientist Paul Taylor. "It will tell you if your sample differs from a reference sample." The technology has an installed base of more than 200 units. Researchers are using it to detect individual genetic variations in different genes, such as those related to breast cancer, lung cancer, cystic fibrosis, multiple sclerosis, Marfan syndrome, and many other diseases.

Swedish company Pyrosequencing AB, meanwhile, is about to launch a sequencing technology that will initially target SNP analysis. It uses an enzyme cascade system to generate light as nucleotides are incorporated onto a single-stranded DNA containing the SNP. "Once you've sequenced the genomes, you need to use the information," says Helena Nilshans, Pyrosequencing's product manager. "Pyrosequencing helps you to benefit from all the markers that scientists are investigating." Beta tests have shown that the method is greater than 99 percent accurate. That's important, for example, in marker validation, continues Nilshans, "because a large error rate means that you'll have to increase the number of analyses to get a statistically significant result."

Mining the Data

As the example of SNPs illustrates, the key post-sequencing issue involves the use of the data. "We're in a time very much like the Renaissance, going from almost no information a few years ago to almost complete information a few years from now," points out David Eisenberg of the University of California Los Angeles (UCLA). "But information is not knowledge. It must be synthesized into knowledge."

Making the jump from raw sequencing data to a functional understanding of the way life works involves more than a few inspired ideas and back-of-the-envelope calculations. Because of the vast mountains of genetic data assembled by genome sequencers, the issue has taken on a needle-in-the-haystack coloration. Fortunately, information technologists have spent several years grappling with the problems of assembling data banks and distilling meaning from the huge amounts of data these repositories contain.

Data mining programs use a variety of advanced technologies, including artificial intelligence and neural networks, to iden-

The Reason Y

"I've been obsessed with the Y chromosome, and more generally the sex chromosomes and how you make males and females," says David Page of the Massachusetts Institute of Technology's Whitehead Institute. "As an aficionado of the Y chromosome, I have a special place in my heart for the Human Genome Project."

Page hopes that the completed human genome sequence will reveal how and why the sex chromosomes evolved and acquired their special niches. His group has discovered that the X and Y sex chromosomes — males have one of each, while females have two Xs — were originally a pair of identical chromosomes. "I'm looking to a day when we will be able to speak generally about what distinguishes the sex chromosomes from ordinary chromosomes," he says.

That understanding won't come from the human genome alone. "When we first see the genome of a bird, the sex chromosomes will be one of the first items to look at," Page continues, "for in birds it is the female, not the male, who has the odd chromosome. This grand experiment of Nature — turning an ordinary pair of chromosomes into sex chromosomes — has played out independently several times." Other genomes of interest to Page: those of crocodiles, turtles, and tortoises, which have no sex chromosomes. Their sexes depend on the temperatures at which their eggs incubate.

Ultimately, the complete human genome may answer what Page calls "the more fundamental question: Why bother to have sex in the first place?" He is confident that this line of study "will engage the interest of a lot of biologists who might think that the genome project is a bit arcane."

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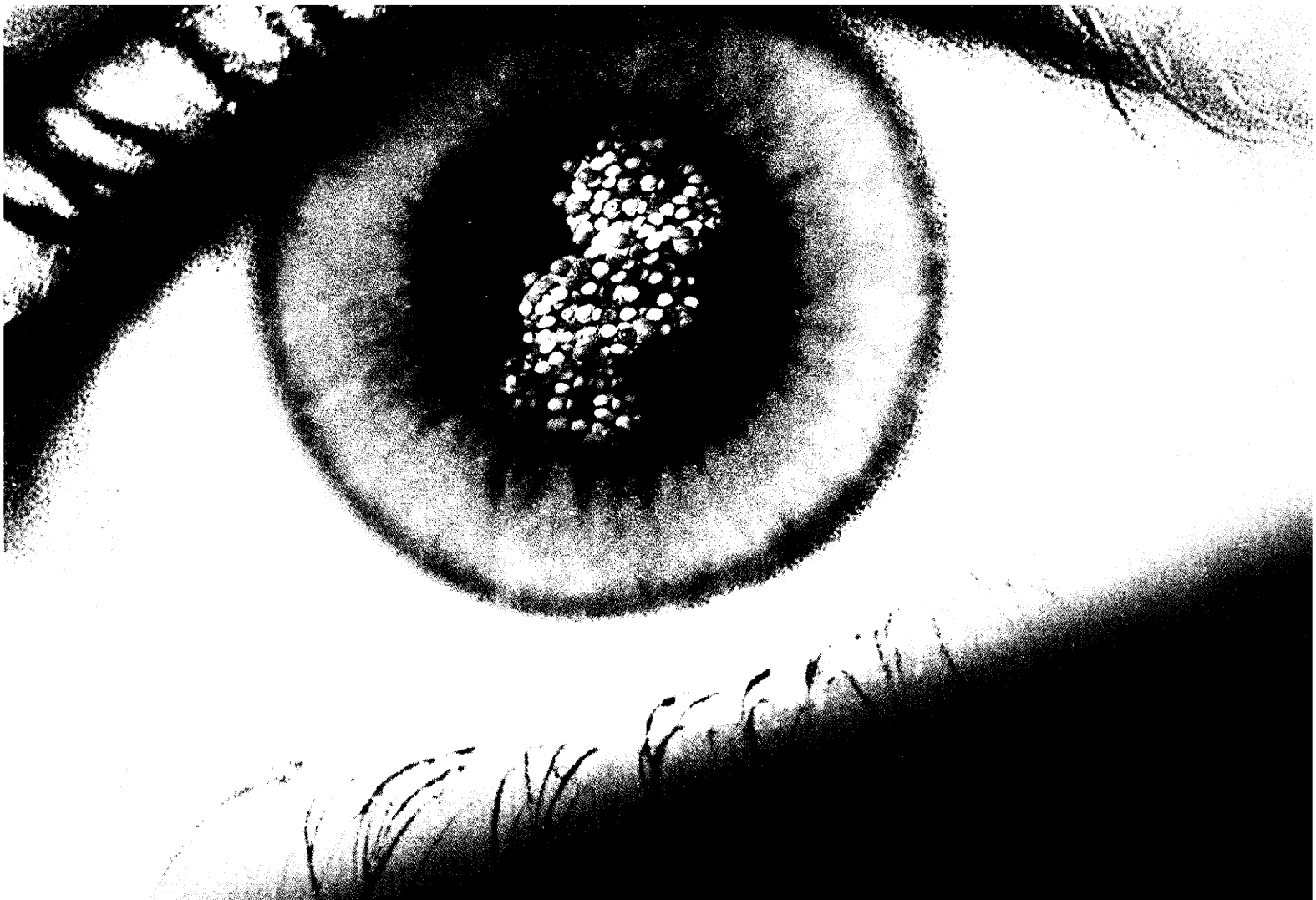

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tify significant clusters of data from among the info-rubble. Several companies have developed tools that help researchers interrogate genetic data, and many biopharmaceutical programs have emerged that systematically dig for genetic gold. "We're at the intersection of the two most important fields in the world right now: the structuring and dissemination of information," says John Devereux, chief scientific officer for the Oxford Molecular Group's bioinformatics effort. "The domain we're trying to structure is modern biology."

In the United States, the National Library of Medicine acts as the repository of publicly available genome sequencing data. Oxford's genetic computer group republishes much of that data in a user-friendly format. "Our mission is to make available the data and the tools to look at it in readily accessible form," explains Devereux. "We also provide a registry for our customers' proprietary sequences. We try to support people who are doing clinical work."

Incyte Pharmaceuticals takes a similar approach. "We've always viewed our mission in life as taking all the information in the public domain and adding value to it," says Randal Scott, Incyte's president and chief scientific officer. Thus, in 1991 the company began its effort to discover new genes from white blood cells. "Gradually," Scott recalls, "we realized that we could expand that activity and conduct a comprehensive analysis of the human body. We could then get a partial sequence for every gene in the human genome. Having large databases means that we at Incyte have spent a large amount of time developing new algorithms for data mining in order to discover novel genes."

Understand How Proteins Work

Eisenberg points to the basic premise of data mining. "The information from the HGP is just a sequence of letters or a series of colored dots in an array," he states. "What does this mean in terms of how organisms work? That understanding will only come as we learn the functions of proteins."

Just under a year ago, Eisenberg and his colleague Todd Yeates set up a company, Protein Pathways, to obtain some of that understanding. The company aims to exploit new computational technologies that they had developed at UCLA.

The first approach has been dubbed 'phylogenetic profiling'. "Proteins that operate together as part of a complex, or a shared metabolic pathway would be expected to be inherited together in whatever genomes contain them, or to be simultaneously absent in organisms that do not require them," explains Yeates. "So you can take any particular protein and look for its presence or absence in any of the completely sequenced genomes. That pattern gives you a descriptor for that protein. If you see two proteins with similar patterns, chances are that they have a relationship in the cell. Often, you have a protein that's uncharacterized. As that protein evolves with a set of other, characterized, proteins, we can infer the function of the unknown proteins."

Last summer, Edward Marcotte and the Protein Pathways team reported another way of using genetic data to understand the functions of proteins. The "Rosetta Stone method" stems from the observation that two functionally related proteins in one organism often can be found fused together into a single protein chain in another organism. Given a large number of genomes, scientist can find a large number of such evolutionary fusion events. "If Protein A is uncharacterized but is fused to Protein B in another organism, there's generally some sort of relationship," says Yeates.

Rethinking Biology

The Human Genome Project has directly or indirectly stimulated several technological developments. Realizing the extraordinary value of accessing every human gene and variation, pharmaceutical companies have worked hard to develop HGP technology to the benefit of their drug discovery programs. The explosion in potential drug targets, for example, has done much to stimulate the growth of high-throughput screening technology.

The impact of the HGP on technology actually goes one step further. The project has a fundamentally inclusive goal. It seeks all, rather than just some, of the human genome sequence. This aggressive, comprehensive approach has set a standard for biological research that has been extended to the examination of gene function (also known as functional genomics), protein structure (proteomics), and even cellular structure (cellomics). Once the life science community embraced the idea of understanding human genetic structure in all its multiplicity, it began to carry that concept into other areas. The long-terms effects of this conceptual approach will undoubtedly transform biology. "Now is a great time for both academia and industry to be doing research into the molecular basis of life and disease," says Incyte's Scott.

The Impact on Society

The Human Genome Project had the original goal of producing both a map and a detailed sequence of the entire human genomic structure. In one sense, the project could be — and was — viewed as the practical development of a research tool. It was an exalted, difficult, and demanding project that had a specific goal, not unlike the original moon landing.

During its early years, the project did focus on the technical and logistical challenges of reaching that ultimate objective. Research teams devised mapping strategies; evaluated available data-handling capacities and tools; developed new capabilities as necessary; invented and improved instruments for sequencing DNA; and even gave some consideration to laboratory management practices.

In recent years, however, the HGP has become diffuse. Unlike the moon-landing program, the project's nature and goals have evolved as the effort has progressed. At the same time, its impact on human society has broadened dramatically, if quietly.

On one rather narrow technical axis, the genome community has changed its focus from the human genome to genomes in general. Scientists have extended their reach and their technologies to *E. coli*, yeast, nematodes, *Drosophila*, mice, corn, *Arabidopsis*, and countless microbial species. The principle here is simple: What is good for people is good for every other organism. If we are to find an underlying

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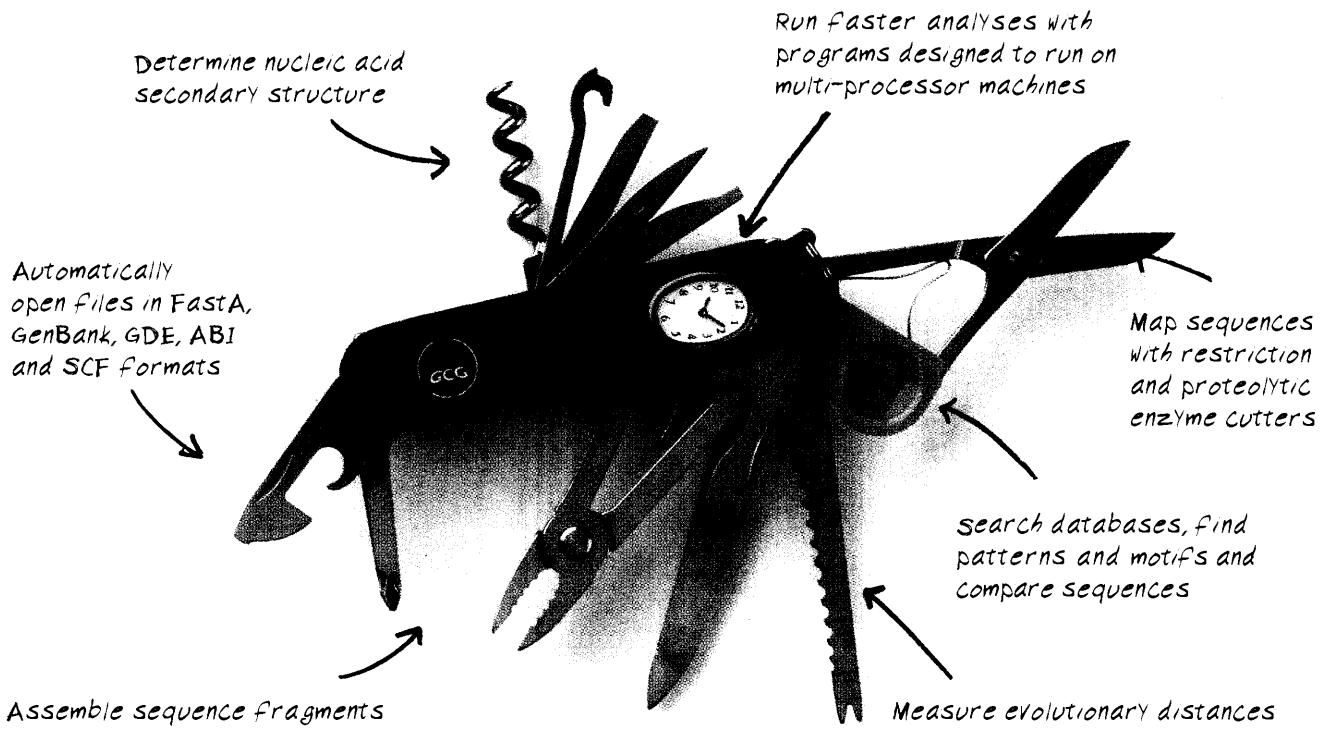

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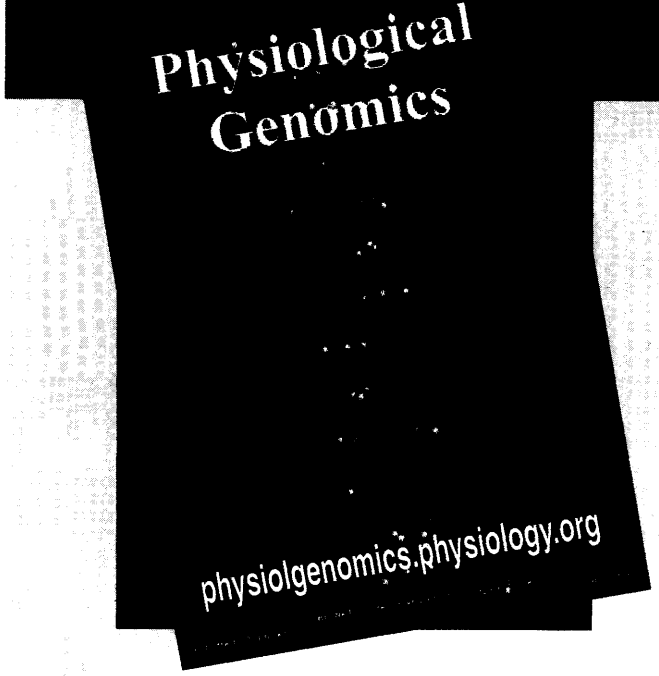

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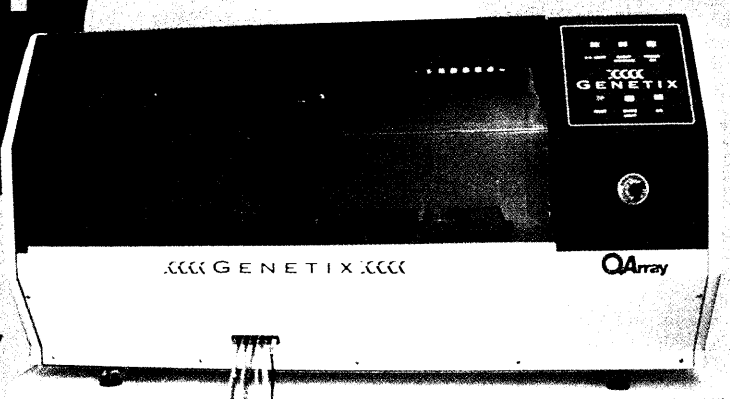

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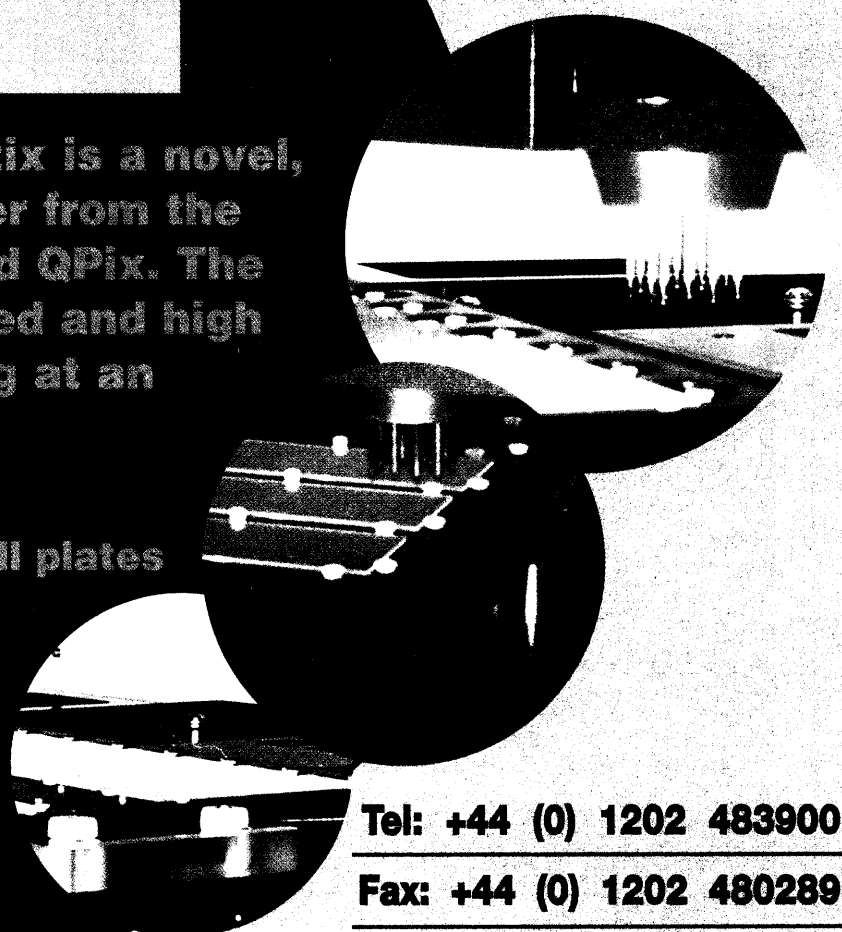

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truth in base pairs of DNA, then we should certainly look in the base pairs of every important organism.

On another axis, life scientists have evolved from viewing the sequencing of a genome as a huge challenge to regarding it as a routine research practice. They saw the power of the new technology, and they believed. Life scientists have placed great faith in their abilities to generate, analyze, assemble, store, and disseminate billions of bases of genetic information for researchers around the world. They are firm in their belief that this information will provide fundamental biological insights into human beings and the model organisms whose genomes are sequenced. In fact, very few areas of modern biology, from biochemistry to epidemiology, can or should ignore the opportunity to include genetic information in their definition. Genetics has become ubiquitous, and it will be used ubiquitously.

Also deriving directly from the focus on genomics is a progressive conversion in our thinking to more integrative models and methods. The subdivision principle of divide-and-understand has long stood tall at the center of biological research. Genes, proteins, and cellular components have all been dissected from their whole environment for intensive individual study. To classical biologists, this process destroys the very substance of life, which lies in the integration of all the parts into a living, functional whole.

Because life scientists have had to pick their way through the vast complexity of biology, the reductionist approach was the only feasible one. But as they have come to command greater and greater proportions of human genetic material, gene sequencers have started to think in broader, more integrated ways. Where scientists once analyzed the biological expression of a single gene, or, at most, a couple of handfuls of genes, they can now analyze hundreds, thousands, and tens of thousands of genes at the same time. In principle — although not yet in practice — we could take a snapshot of the activity of every single human gene. Doing so would give us a total and complete picture of human genetics in action.

An important feature of the "-omics" approach is that it permits scientists to study populations without sacrificing the ability to analyze any individual component. Comprehensive new models make it possible to integrate genetic analysis from the single gene to the entire population simultaneously, and to link all the parts simultaneously. Similar integration is in sight for proteins. While the paradigms remain to be developed, the prospects are truly staggering.

And this is only the beginning. "The question of the genome opened up when I started in graduate school," recalls Fred Blattner. "Now, we're getting to the end of the discovery phase and into production — and perhaps into more discovery. It's a little bit like being a physicist a century ago."

Peter Gwynne is a freelance science writer based on Cape Cod, Massachusetts. Guy Page is managing director of Ferguson Forth Page, a consulting firm in Madison, Wisconsin.

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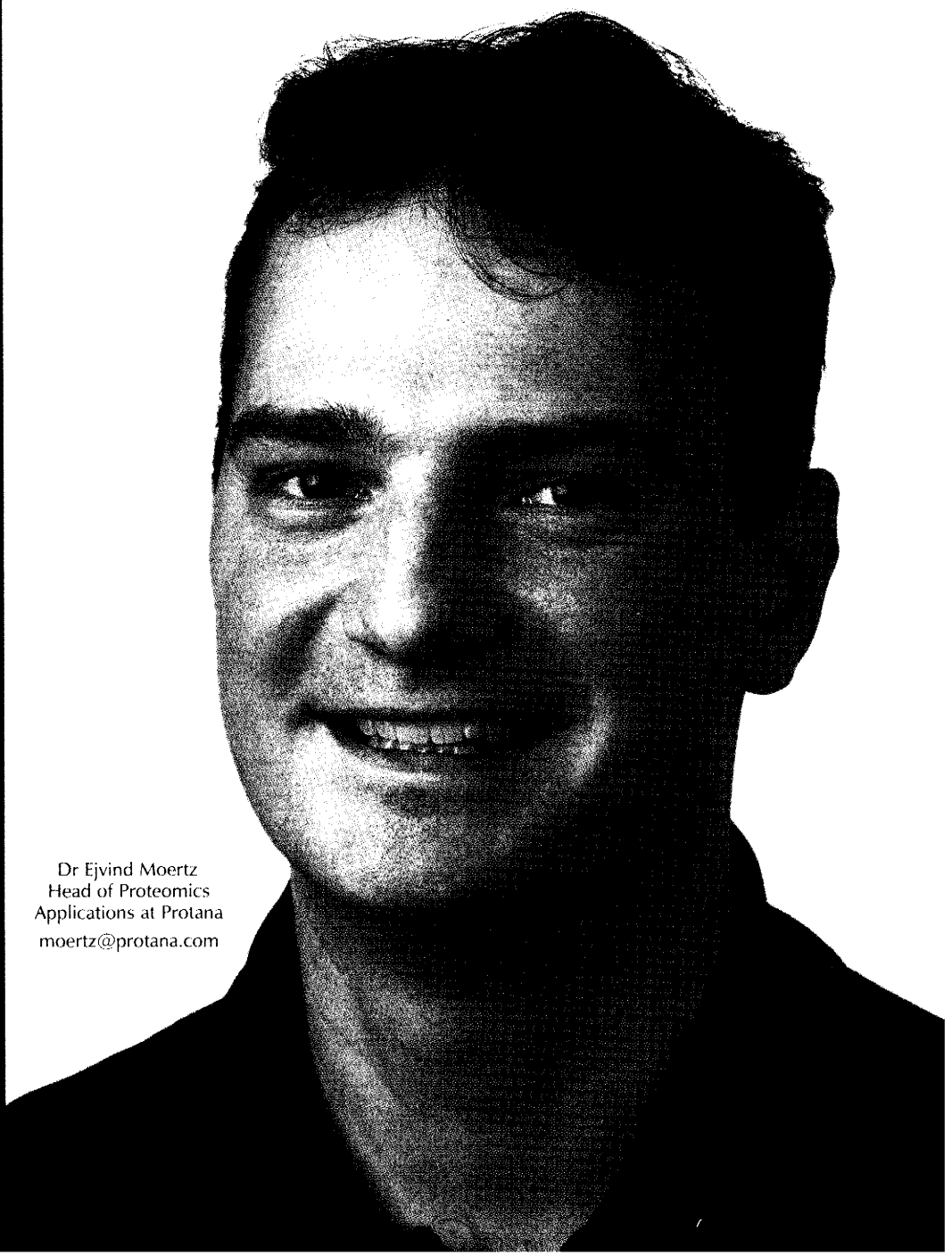

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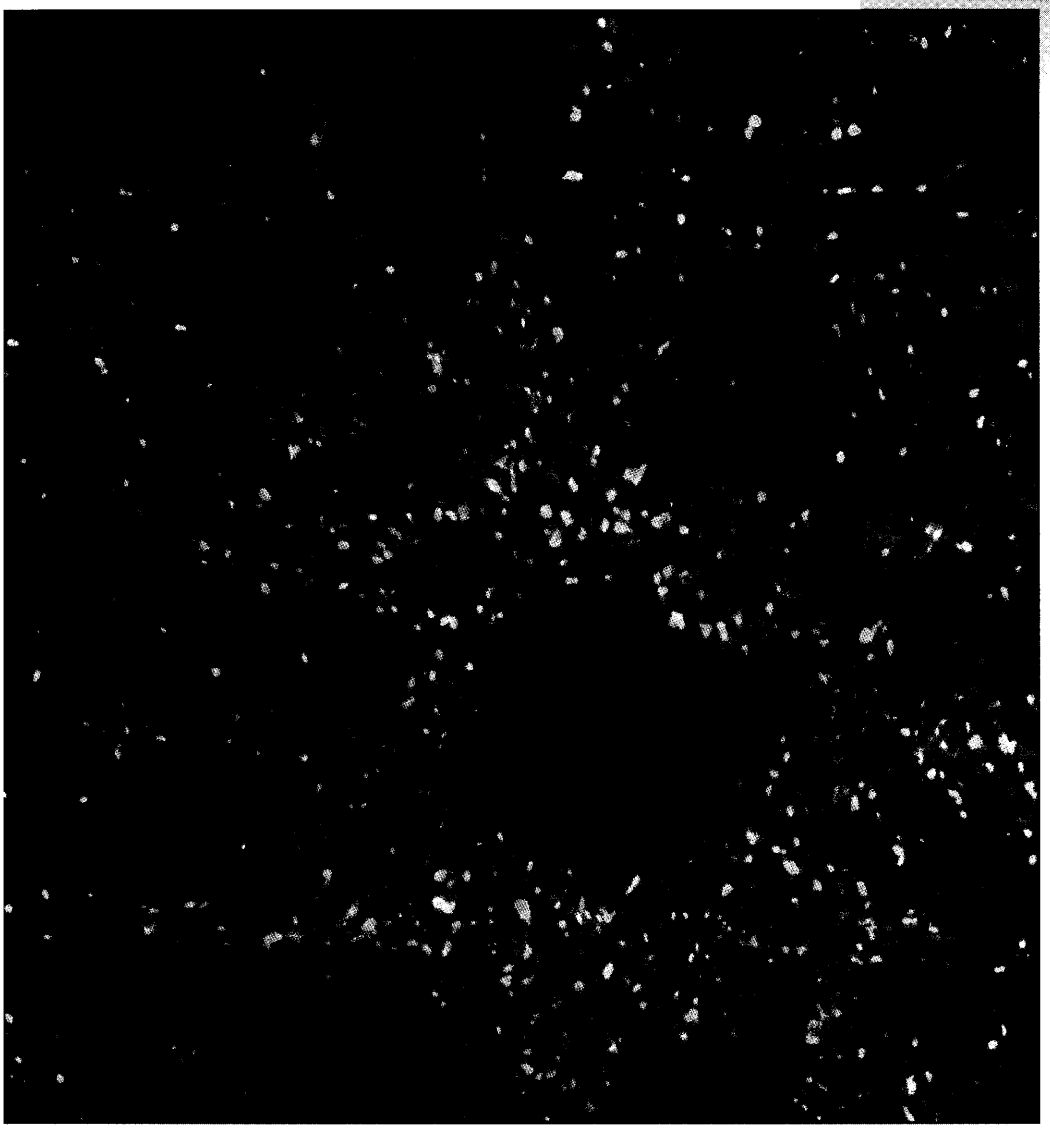

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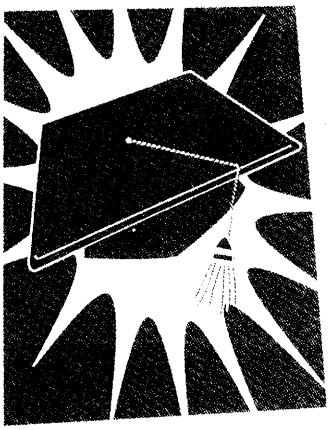
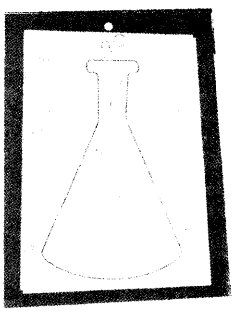


Focus on Graduate Programs

The Interdisciplinary Imperative by Peter Gwynne

Companies in the life science industry routinely seek scientists who can work effectively in interdisciplinary teams. A few colleges and universities now offer graduate courses designed to instill that skill.



Recruiters and managers of life science companies often voice a significant complaint about scientific education. Too many science graduates, they say, start corporate life without the ability to understand and communicate with scientists in disciplines different from their own.

That stems largely from the different requirements of academe and industry. Academic instruction and research have traditionally taken place in the context of specific disciplines or subdisciplines. Industrial research and development, by contrast, occurs in an ambience of teamwork. "Although science departments in universities naturally work in teams, I think that universities have trouble understanding the notion of teamwork as it applies in industry," concedes one academic.

Some academic institutions have started to compensate for that lack of understanding by offering interdisciplinary graduate programs at the Master's and doctoral levels. Program organizers seek students with good undergraduate degrees, an interest in broadening their scientific understanding and, in some cases, exposure to scientific subjects beyond their own. Here, we interview representatives of three interdisciplinary programs in established universities and of one new institution set up to train students for the life science industry.

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AUSTIN, Texas: "We offer a very broad interdisciplinary program," says Alan Lambowitz, director of the Institute for Cellular and Molecular Biology at the University of Texas. "It involves the colleges of natural science, pharmacy, and engineering. Molecular biology, chemistry, physics, computer science, bioengineering, and chemical biology are all represented in one core molecular biology program."

Started in 1993, the program expanded two years ago. In the past academic year, four individuals graduated with Ph.Ds and one with a Master's degree. Now, the program has 84 students on the Ph.D. track and one Master's candidate.

The program has several goals. "It involves a combination of wanting to be in the forefront of research in molecular biology; meeting the needs of the biotechnology and computer industries; and capitalizing on the university's strength in chemistry, computer sciences, and bioengineering," says Lambowitz. Its interdisciplinary nature helps students to adapt to a changing job market. The program also gives interested students direct links with industry. Those include summer internships with local companies and participation in industry-sponsored research on campus. Several students are listed as co-discoverers of patented items. Students can also train for oral presentations — a significant selling point for entry to industrial positions, according to graduate adviser Dean Appling.

The program has tough entry criteria. "Last year," says associate director Henry Bose, "we made offers to 20 percent of 360 applicants, of whom 55 percent said 'yes'." In addition to graduate students, the program has almost 100 postdoctoral fellows, from Asia, Europe, and South America, as well as the United States.

What characteristics do faculty members seek for entrants to the program? "Research exposure is useful," says Appling. "Letters of recommendation are very important." Adds faculty member Ellen Gottlieb: "Seek the best training you can and try to excel."

AMES, Iowa: Iowa State University has nine interdepartmental programs that offer Masters' and Ph.D. degrees in the life sciences. The programs cover a wide spectrum, from water resources to molecular, cellular, and developmental biology. "Our acceptance rate is about 20 percent; that's much more

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

Continued ➢

ANNOUNCING THE ESTABLISHMENT OF THE CENTER FOR MOLECULAR & CELLULAR TOXICOLOGY THE UNIVERSITY OF TEXAS AT AUSTIN

The University of Texas at Austin has established an interdisciplinary Center for Molecular and Cellular Toxicology. The mission of the CMCT is *"To provide leadership for the expansion of programs of excellence in environmental health sciences research and education"*. The CMCT is supported by the Colleges of Pharmacy and Natural Sciences at UT Austin and the University of Texas M. D. Anderson Cancer Center, Department of Carcinogenesis, located at the Science Park -Research Division, in Smithville, about 40 miles east of Austin. Faculty participating in the Center represent a wide variety of scientific disciplines (Pharmacology, Toxicology, Medicinal Chemistry, Pharmaceutics, Neuroscience, Nutrition, Biochemistry, Chemistry, Marine Biology, and Civil and Mechanical Engineering) with expertise in the areas listed.

Graduate students are provided with an extremely competitive stipend, tuition and fees are paid, and support for travel to scientific meetings is a priority of the Center. A variety of attractive career opportunities are available for graduates of our program. Additional information on the research interests of specific faculty can be obtained via the WWW at:

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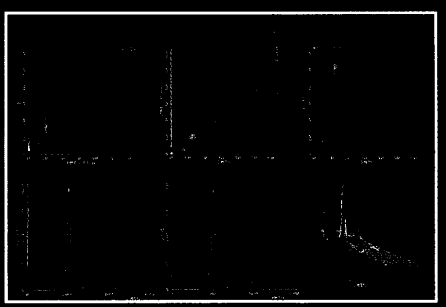
Austin, the state capital, is situated in central Texas, nestled on the edge of the beautiful Texas Hill country. Rolling hills, lush landscape and a panorama of brilliant wildflowers dot the highways. An abundance of rivers, lakes and campgrounds add to the many benefits of UT's location. The Colorado River runs through the city and the chain of Highland Lakes, including Lake Travis, extends to the west. Excellent sport, music, golf, swimming, boating and fishing are available throughout most of the year.



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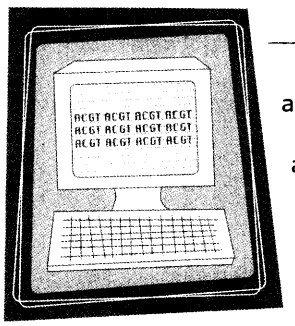

selective than the single majors," says John Mayfield, the university's associate graduate dean for interdisciplinary programs. "Interdepartmental programs are much more aggressive, as they're solely graduate programs."


John Mayfield

The interdisciplinary topics are particularly relevant for students who plan industrial careers. In that, they follow historical example. "Iowa State has a tradition of placing people in industry," explains Mayfield. "The tradition includes a sense that we have to reach out to the underprivileged and do things to help society."

In Mayfield's view, genetics and bioinformatics are the hottest life science topics available through the interdisciplinary organization. The most recent offering, started last fall, is a program in bioinformatics and computational biology. That course, says Mayfield, "is very interdisciplinary, requiring two major professors, one in biology and the other in a computational science. We're looking for our first class of 10 students next fall, along with an equal number of transfers from other majors this spring."

Life scientists in the interdisciplinary programs can expect an opportunity to work in joint research programs sponsored by industry. They are also expected to present their work formally to their peers and faculty members on a regular basis. As Mayfield sees it, presentational skills are even more important in academe than in industry.

For potential applicants, Mayfield has a simple piece of advice. "Know what you want to do and pursue it," he says. "Don't be afraid of doing the unusual."

BOZEMAN, Montana: "The goal of our program is to train students with a multidisciplinary focus," says Gwen Jacobs, director of the Complex Biological Systems Graduate Training Program at Montana State University. "It's become increasingly clear that many students in traditional graduate training programs do not have the math and computational skills to start to address some of the complex issues facing academic and commercial sector researchers in the biomedical sciences."


Gwen Jacobs

The Ph.D. program involves seven academic departments: biology, chemistry/biochemistry, computer science, mathematics, microbiology, plant science, and veterinary molecular biology. It emphasizes the benefits and practicality of teamwork. "Students work in interdisciplinary teams throughout their research careers," explains Jacobs. "We'll always have a mathematician, a computer scientist, and several biologists working on a particular program, such as looking at a gene chip array or examining coding in the brain."

The program started last August, supported by an Integrated Graduate Education and Research Training grant from the National Science Foundation. So far, it has offered multidisciplinary courses to students in other majors. But this year, adds Jacobs, "we're recruiting like mad. That's our biggest challenge."

What types of graduates does Jacobs expect to join her program? "We're looking primarily for students who have a real interest in working outside of a single domain and taking on a new skill set," she says. "We don't require students to come in with backgrounds in both math and biology. We just want to see good backgrounds in a single discipline, such as biology, computer science, or math. Our goal is to take those students and train them in the other disciplines. They'll learn from the course work, from on-the-job training, and from each other. This graduate program will give students the skills necessary to talk understandably to the scientist in the next office in industry."

CLAREMONT, California: As the seventh member of the Claremont Colleges consortium, the Keck Graduate Institute (KGI) is a new and unique graduate school, dedicated exclusively to developing applications from emerging discoveries in the biosciences and to training future leaders of the life science industry. Its first class of about 30 students, due to enter the institute in August, will spend two years obtaining a professional Master of Bioscience (MBS) degree.


Henry Riggs

"The first year is a core that everybody will take to build a strong base in science and technology. Everyone will start on a four-week project when they arrive," says Henry Riggs, KGI's president. "In the second year, students can focus somewhat on such topics as bioinformatics, drug development, and regulatory affairs." Nontechnical courses, such as management and ethics, will account for about 20 percent of the program.

KGI expects its MBS graduates to find jobs in project development, project management, marketing, manufacturing operations, and regulatory affairs. "These folk are going to be in positions where they'll leverage off their science and technology knowledge," says Riggs.

For its initial classes, KGI wants students with backgrounds in science, computer science, or engineering. "We are looking for students who are very strong but not solely in quantitative scores," says Riggs. "We'll look for work experience; we hope for that in about one-third of our class. And we'll look for the ability to be effective in the world of work, not just in the laboratory."

For further valuable career features, go to www.scienceonline.org, click on ***Science* Careers**, then click on **Advice and Perspectives**.

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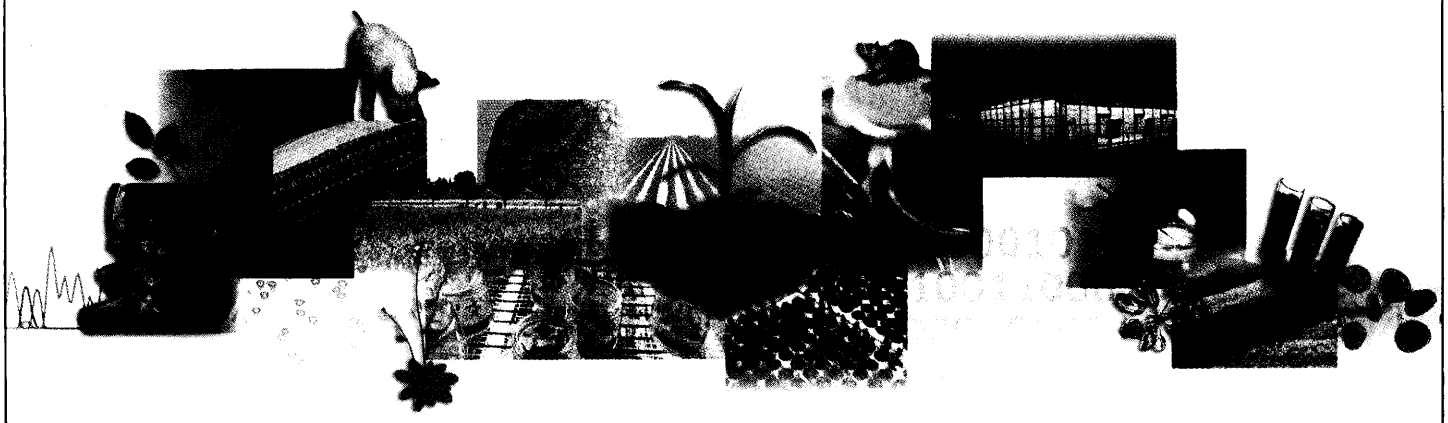

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The post-genomic era of biological research will focus on understanding how complex, inter-linked systems function in living organisms. New combinations of skills, and therefore new kinds of Ph.D. training, will be required of future biological scientists.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

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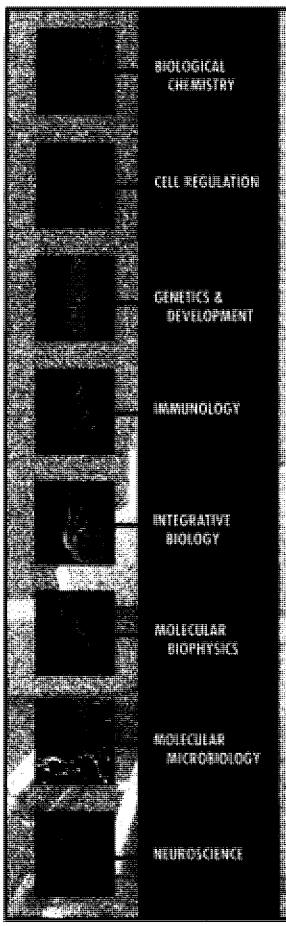

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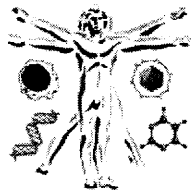

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UMASS Amherst

Darwin Fellow

UMASS Amherst announces a post-doctoral research/lectureship in organismic and evolutionary biology. More then 75 faculty members in 10 departments are committed to the study of organismic and evolutionary biology, offering unique training and research opportunities for recent Ph.D.s. Our two-year lecture/research position allows independent research with a faculty member and experience developing and teaching a one-semester undergraduate biology course. 1st year salary: $29,000. 2nd year salary: $31,000. Position subject to availability of funds. To apply, send: CV; 3 letters of reference; statements of research and teaching interests; and letter of support from your proposed UMASS faculty sponsor.

E-mail darwin@bio.umass.edu or call 413-545-0928 for a list of faculty research interests and more information. Send materials to:

Darwin Fellowship
Graduate Program in Organismic & Evolutionary Biology
319 Morrill Science Center
University of Massachusetts Amherst
Amherst, MA 01003-5810

Application review begins: March 1, 2000. Position remains open until successful candidate is selected. Start date: September 1, 2000.

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

Brain Science Graduate Program

Brown University

Brown University's new Brain Science Program has created a new graduate program in Brain Sciences. The Program involves interdisciplinary study spanning physics, computer science, mathematics, cognitive and linguistic sciences, neurosciences, and psychology. Graduate study in brain sciences is also available through any of the 10 affiliated graduate programs.

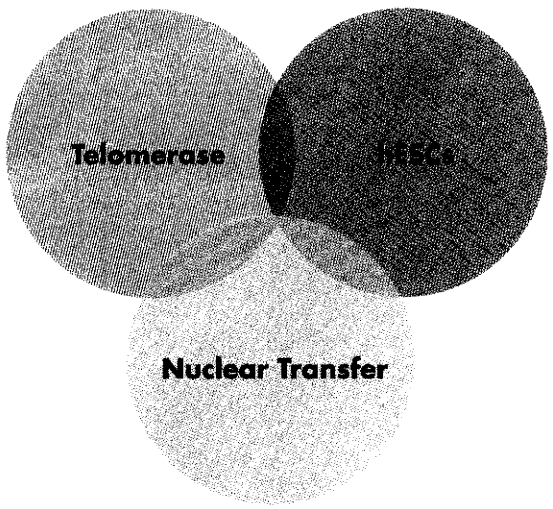
Funds to begin this program have been provided in part by the Burroughs Wellcome Interfaces Program.

For more information see: http://www.brainscience.brown.edu/apply.html

Or contact:

John Donoghue
David Mumford
Directors
Brain Science Graduate Program
Brown University
Box 1953 BSP
Providence, RI 02912
Phone: 401-863-9524
Fax: 401-863-1074
Email: Brainscience@Brown.edu

Advancing Cancer Therapeutics and Regenerative Medicine for the 21st Century



- **Understanding the role of telomeres and telomerase in the molecular basis of human somatic cell mortality and immortality is a new and exciting area of basic research with potentially broad application in the treatment of cancer and age-related diseases.**
- **Understanding the basis for the immortality and pluripotency of human embryonic stem cells and how they differentiate into all normal somatic cells will help lay the foundation of regenerative medicine in the 21st century.**
- **Understanding the mechanism of nuclear reprogramming that enables mammalian cloning using adult somatic cells has tremendous promise as a tool for treating human disease and improving the quality of human life.**

Geron Corporation in the San Francisco Bay area and our subsidiary, Geron Bio-Med in Roslin, Scotland, are R&D leaders in three complementary fields: Telomerase, hESCs, and Nuclear Transfer. We seek highly motivated and accomplished staff and postdoctoral scientists to contribute to our leadership position.

STAFF SCIENTISTS

Cell Biology
Applicants for Cell Biology positions should have experience in animal model design and implementation, along with hepatocyte biology and toxicology testing. (Req. 4399)

Viral Vector Biology
Candidates for Viral Vector Biology should have experience in viral and non-viral vector design, construction, and production for research and gene therapy applications. (Req. 5599)

Genomics/Bioinformatics
Candidates for our Functional Genomics/Bioinformatics positions must have expertise in cDNA cloning, expression vector design, protein and mRNA expression analysis, and biocomputational skills, bioinformatics and UNIX environment experience. (Req. 0500)

POSTDOCTORAL SCIENTISTS

We will consider postdoctoral applicants from any field of science with the relevant background to contribute productively to ongoing research in these areas and a proven track record of success based upon research publications in peer-reviewed journals. (Req. 0400)

Please respond via email with a letter and resume to Geron Corporation at hr@geron.com. Use the Subject line to direct your resume to one of our scientific staff members, below:

Calvin Harley, PhD, Chief Scientific Officer

Allison Chin, PhD, Director of Assay Development and Screening

Choy-Pik Chiu, PhD, Director of Cell Biology and Pharmacology

Sergei Gryaznov, PhD, Director of Nucleic Acid Chemistry

Jane Lebkowski, PhD, VP, Cell and Gene Therapies

Gregg Morin, PhD, Director of Molecular Biology and Biochemistry

Richard Tolman, PhD, VP, Drug Discovery

John Clark, PhD, Roslin Institute, Geron Bio-Med

Ian Wilmut, PhD, Roslin Institute, Geron Bio-Med

Geron Corporation, 230 Constitution Drive, Menlo Park, CA 94025.

An Equal Opportunity Employer

www.geron.com

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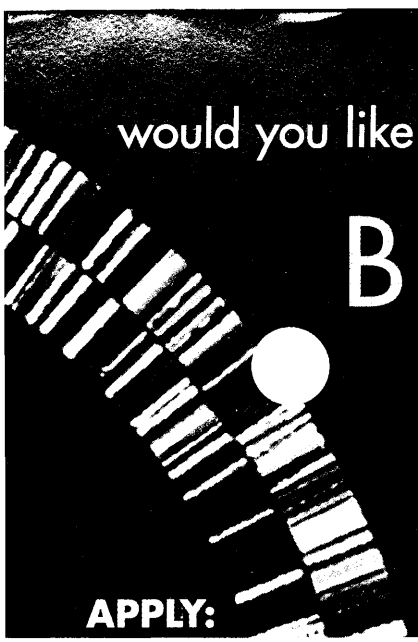

would you like to join a major new program in

BIOINFORMATICS?

Virginia Polytechnic Institute and State University anticipates hiring a large team of highly motivated faculty and support personnel at all levels beginning **July 1, 2000.**

We are interested in individuals or groups of faculty anywhere in the world who would like to create a world class institute in bioinformatics and computational biology at Virginia Tech. We are looking for individuals who work collaboratively to solve complex biological problems, and who have demonstrated an ability to compete for major funding. We anticipate positions at every tenure track faculty level as well as non-tenure track faculty, graduate students, and support personnel, including programmers and technicians.

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 fact that Virginia Tech will be among the first universities connected to the new high speed internet. The university has created an environment which encourages entrepreneurship, with a liberal intellectual properties policy (50% royalties to inventor) and with the Virginia Tech Corporate Research Park in close proximity to campus.

APPLY:

Dr. Cynthia Gibas
Bioinformatics Initiative Screening Committee
303 Fralin Biotechnology Center
West Campus Dr. (0346)
Blacksburg, VA 24061
ph. 540.231.2393 fax: 540.231.7126
e-mail: cgibas@vt.edu
http://www.bioinformatics.vt.edu
Electronic documents in Adobe PDF or Microsoft RTF formats are acceptable.

DIRECTOR

We are seeking a senior researcher with an outstanding publication and funding track record to serve as director of the bioinformatics program.

FACULTY

If you are a faculty candidate with a research focus in bioinformatics, computational biology, genomics, or proteomics, please send us your CV accompanied by a statement of your research and career plans. We are seeking candidates from any relevant background in the life sciences, physical sciences, computer science, engineering, or mathematics.

POSTDOCTORAL RESEARCH ASSOCIATES

Independent, highly motivated postdoctoral candidates will be selected to carry out research programs supervised by Virginia Tech faculty. Please send a CV accompanied by a 1-2 page statement of your research plan, and a brief statement of your training and resource needs.

RESEARCH PROGRAMMERS

We are seeking experienced programmers with a background in database development, mathematical modeling, or scientific software development, a background or interest in natural sciences, and the desire to work in collaboration with scientists to solve complex research problems. Please send a resume detailing relevant experience and programming expertise.

VIRGINIA TECH IS AN EQUAL OPPORTUNITY EMPLOYER

NEURODEGENERATIVE DISEASE RESEARCH FACULTY POSITION

UNIVERSITY OF WISCONSIN-MADISON

The University of Wisconsin-Madison's Waisman Center is currently constructing a $23 million building to accommodate an expansion of its research programs in innovative gene and cell-based therapies for neurodegenerative diseases, scheduled for completion in July 2000. This expansion will support the recruitment of up to four new physicians and basic scientists over the next two years in concert with the Department of Neurology or related departments of the UW-Medical School. As part of this new initiative, we invite applications for the first of these tenure-track faculty positions at the Assistant, Associate, or Professor level, to start after July 1, 2000.

For this initial recruitment, we anticipate that the individual will provide leadership to a new program in the discovery and early development of innovative gene and cell-based therapies for neurodegenerative diseases, such as Parkinson's and Alzheimer's diseases. This individual will join a growing biomedical research community in neuroscience research at UW-Madison, and will guide program development, including participation in the recruitment of additional faculty. The incumbent will occupy state-of-the-art laboratory research and office space in the Waisman Center's new addition. This new building offers new research laboratories as well as highly-specialized support facilities including a cleanroom manufacturing facility for the production of biopharmaceuticals for Phase I and II human clinical trials, and a functional imaging center with both PET and fMRI scanning technologies. The Waisman Center is the largest interdisciplinary research center in the Graduate School of the UW-Madison and conducts research in areas related to human development in the biological and behavioral sciences.

The academic appointment will be in the Department of Neurology or related departments of the UW-Madison's Medical School. Appropriate background may be M.D., Ph.D., or M.D./Ph.D., with responsibilities including research, teaching in undergraduate, graduate and professional programs, and other activities commensurate with background and experience. The successful candidate should have a strong, externally funded research program in molecular biology and/or molecular and cellular pathogenesis of neurodegenerative disease, with an interest in developing experimental biological therapeutics, and strong publications record. The research focus of this position will imbue strong elements of translational research in a multi-disciplinary program.

Submit curriculum vitae, a summary of research program goals, and three references by February 15, 2000 to:

Terrence R. Dolan, Co-chair, Search Committee
Waisman Center–Room 827
University of Wisconsin-Madison
1500 Highland Ave
Madison WI 53705 (dolan@waisman.wisc.edu)

Note: Unless confidentiality is requested in writing, information regarding the names of applicants must be released upon request. Finalists cannot be guaranteed confidentiality. UW-Madison is an equal opportunity / affirmative action employer.

The Face *of* Pfizer

Pfizer Central Research is the R&D division of Pfizer Inc, a global, research-based pharmaceutical company at the forefront of a dynamic, rapidly growing industry. We're known for both our unparalleled drug development pipeline and the respect and resources we give to our people. If that appeals to you, maybe yours could be the new Face of Pfizer. Join us in the following opportunity at our Central Research facility in Groton, Connecticut.

SENIOR RESEARCH INVESTIGATOR

You will lead the Animal Health Biological Discovery site and global project teams focused on livestock metabolic disease (particularly acidosis) using animal model development, vaccine design and testing, and immunological, bacteriological and enzymatic assays. Your qualifications should include a PhD, 7+ years postdoctoral experience, and a strong record of microbiological, biochemical, physiological, and/or immunological research on metabolic disease of livestock. DVM, vaccine and large animal experience desired.

We encourage all candidates to apply online through our web site at **www.pfizer.com**. If necessary, you may also mail your resume to: Pfizer Inc, Central Research, Ad Code: 9930420SCI, c/o Aon Consulting, P.O. Box 25, Findlay, OH 45839. Pfizer is an equal opportunity employer.

Pfizer Central Research
Life is our life's work.

CHAIR
MEDICAL DEPARTMENT

Brookhaven National Laboratory (BNL) is seeking a Chair for the Medical Department. BNL is a multidisciplinary laboratory engaged in basic and applied research and is managed by Brookhaven Science Associates under contract with the Department of Energy (DOE).

Research in the Medical Department covers a wide range of topics, including a clinical neuroscience program that uses imaging technologies to investigate the effects of drugs and aging in the human brain, a cancer research program that focuses on the development of new tools for tumor detection and on new forms of radiation therapy, a radiation biology program that focuses on cell damage and a radiopharmaceutical and radioisotope program. This research takes advantage of the unique facilities at BNL that include imaging capabilities (PET, MRI, SPECT), the National Synchrotron Light Source, the Alternating Gradient Synchrotron, a Whole Body Counting Facility and a Medical Research Reactor.

Support for the Medical Department at BNL totals approximately $12 million per year and is sponsored primarily by DOE, with substantial support from NIH and NASA.

We seek candidates with an international reputation who have the breadth and scope to promote and stimulate research across the range of activities at the Medical Department. Applications and nominations should be sent by April 1, 2000 to Dr. Nora D. Volkow, Associate Laboratory Director for Life Sciences, Brookhaven National Laboratory, Bldg. 490, Upton, NY 11973. BNL welcomes diversity and encourages applications from all qualified individuals.

BROOKHAVEN
NATIONAL LABORATORY

www.bnl.gov

REGULAR, TENURE-TRACK PROFESSORS

DEPARTMENT OF BIOLOGICAL SCIENCES

IN KEEPING WITH ITS INSTITUTIONAL POLICY REGARDING THE RECRUITMENT OF NEW PROFESSORS, THE *UNIVERSITÉ DU QUÉBEC À MONTRÉAL* IS SEEKING HIGHLY QUALIFIED INDIVIDUALS TO CONTINUE THE UNIVERSITY'S REPUTATION FOR EXCELLENCE, AND TO RENEW AND REFRESH ITS PROFESSORIAL STAFF.

FOR ALL POSITIONS, CANDIDATES WILL BE RESPONSIBLE FOR TEACHING AND SUPERVISING UNDERGRADUATE AND POSTGRADUATE STUDENTS, CONDUCTING ACADEMIC RESEARCH AND PERFORMING COMMUNITY SERVICE. WRITTEN AND ORAL FLUENCY IN FRENCH IS REQUIRED FOR ALL POSITIONS, WHILE POSTDOCTORAL EXPERIENCE IS A DEFINITE ASSET. THE FOLLOWING QUALIFICATIONS ARE PARTICULAR TO EACH FIELD OF SPECIALIZATION:

ENVIRONMENTAL BIOTECHNOLOGY

- Ph.D. in Biological Sciences, specializing in the use of biotechnology to resolve environmental problems
- Ability to develop an independent research program concerning the biological evaluation and improvement of environmental quality for living organisms or ecosystems
- Potential transfer of biotechnology to the industrial sector
- Demonstrated interaction with one or more of the following fields: molecular engineering, toxicology, environmental impact assessment
- Ability to teach undergraduate and postgraduate courses in one or more of the following fields: environmental biotechnology, toxicology, cellular biology, microbiology, molecular biology, genetics, biochemistry, ecology

IMMUNOLOGY

- Ph.D. in Immunology with expertise in experimental or comparative immunology
- Research experience in immunotoxicology, animal health or environmental health
- Ability to teach undergraduate and postgraduate courses in one or more of the following fields: immunology, cellular biology, toxicology, microbiology; as well as the unit in defense mechanisms for the problem-based learning Bachelor's degree in Biology

PROCESS BIOTECHNOLOGY

- Ph.D. in Biological Sciences, specializing in process biotechnology
- Ability to develop a research program in the food sciences, fermentation, environmental biopharmaceutics, or biological treatment using microorganisms
- Ability to teach undergraduate and postgraduate courses in one or more of the following fields: microbiology, cellular biology, biochemistry, toxicology, microbial ecology

TERRESTRIAL ANIMAL ECOLOGY

- Ph.D. in Biological Sciences, specializing in terrestrial animal ecology or a related field
- Research experience in terrestrial animal ecology, preferably in the integrated management of large mammals in forest environments
- Excellent research record and the ability to begin a high-quality research program immediately
- Ability to supervise and teach undergraduate and postgraduate students in the following fields: mammalian ecology, wildlife management, ecology, evolution, natural selection; as well as the unit in animal diversity for the problem-based learning Bachelor's degree in Biology

STARTING DATE: June 1, 2000

REMUNERATION: According to the SPUQ-UQAM collective agreement

THE UNIVERSITY HAS ADOPTED EQUAL-OPPORTUNITY AND EMPLOYMENT EQUITY PROGRAMS AND ENCOURAGES APPLICATIONS FROM WOMEN, MEMBERS OF VISIBLE MINORITIES, ABORIGINAL PEOPLE AND PERSONS WITH A DISABILITY. THE SELECTION AND HIRING OF CANDIDATES IS SUBJECT TO CANADIAN IMMIGRATION LAWS.

INTERESTED CANDIDATES ARE INVITED TO FORWARD A SIGNED, DATED, DETAILED CURRICULUM VITAE, IN FRENCH, ALONG WITH THREE LETTERS OF RECOMMENDATION, BEFORE FEBRUARY 25, 2000, 5 P.M., TO: JULIE LAFOND, PH. D., DIRECTRICE, DÉPARTEMENT DES SCIENCES BIOLOGIQUES, UNIVERSITÉ DU QUÉBEC À MONTRÉAL, P.O. BOX 8888, SUCCURSALE CENTRE-VILLE, MONTREAL, QUEBEC H3C 3P8. TELEPHONE: (514) 987-3000, EXT. 7857; FAX: (514) 987-4647
WEBSITE: **www.rhu.uqam.ca/aprofs/nouvellepage2.htm**

UQÀM
Université du Québec à Montréal

FACULTY POSITIONS IN MOLECULAR AND CELLULAR PHARMACOLOGY AND TOXICOLOGY

Under new leadership, The Department of Pharmacology and Toxicology at the University of Texas Medical Branch (UTMB) will be undergoing dynamic growth and development with the anticipated recruitment of five additional faculty members in the next two to three years. We are now seeking applications for *three tenure-track* positions at the **ASSISTANT PROFESSOR** or **ASSOCIATE PROFESSOR** level. Applicants must have a doctoral degree, at least two years of completed postdoctoral training, and experience in grant writing. Applicants at the associate professor level should demonstrate sustained funding including major extramural support.

The successful candidates will be expected to develop and sustain strong and independent extramurally-funded research programs and to contribute to the graduate and medical teaching missions of the department. Research areas of special interest include but are not limited to: effects of drugs and toxicants on cellular signaling pathways; regulation of expression of biotransformation enzymes; molecular and cellular neuropharmacology; molecular neuroscience of psychiatric diseases, including substance abuse; cancer cell biology; cardiovascular pharmacology. Individuals with demonstrated productivity utilizing molecular, cellular, or genetic approaches to elucidate mechanisms of drug, toxicant or carcinogen action are especially encouraged to apply.

The positions offer very competitive salaries and start-up packages. In addition, attractive opportunities exist for new faculty development through participation in an NIEHS-funded Center in Environmental Health Sciences and the Sealy Centers for Cancer Cell Biology, Molecular Cardiology, and Structural Biology. New Centers of Excellence in Environmental Health and Medicine, Neuroscience, Gastrointestinal Health, and Bioinformatics/Genomics will provide access to new core facilities and additional opportunities for collaborations to enhance individual research efforts.

Review of applications will begin on March 6 and will continue until all positions are filled. All applications should contain the following materials: current curriculum vitae and list of publications, concise statement (< 3 pages) of research accomplishments and future plans, names and contact information on three references. Please submit to: Dr. **James Halpert, Professor and Chairman, Department of Pharmacology and Toxicology, 301 University Boulevard, University of Texas Medical Branch, Galveston, TX 77555-1031.** UTMB is an affirmative action/equal opportunity employer.

UTMB The University of Texas Medical Branch at Galveston

St. Jude Children's Research Hospital

ALSAC • Danny Thomas, Founder

POSTDOCTORAL POSITIONS

Postdoctoral positions are available for NIH supported projects in the following areas: Regulation of cytochrome P4503A and P-glycoprotein and DNA sequence diversity in genes involved in CYP regulation and drug elimination. These projects provide an excellent opportunity to apply the latest techniques in functional genomics and proteomics and in identifying single nucleotide polymorphisms. Candidates should have experience in molecular biology. Inquiries should be sent to: **Dr. Erin Schuetz, St. Jude Children's Research Hospital, 332 N. Lauderdale, Memphis, TN 38105. E-mail: erin.schuetz@stjude.org**

Equal Opportunity Employer

PHYSIOME SCIENCES

Physiome Sciences develops computer-based models of mammalian systems for use in pharmaceutical research. The company is seeking to add to its growing team of modeling scientists, software engineers and database specialists to create new tools for drug discovery and development. Immediate openings are available in the following areas:

CELL AND ORGAN MODELING

Ph.D. with experience in creating and applying biophysically detailed computer models of excitable cells and/or cell networks.

BIOCHEMICAL MODELING

Ph.D. with ability to develop computer-based simulations of signal transduction, enzymatic and/or metabolic pathways.

DRUG METABOLISM

Ph.D. with a quantitative, applied understanding of hepatic drug transformation at the molecular and biochemical level.

Physiome Sciences offers a competitive salary and benefits package. Please send resume, indicating position desired to: **PHYSIOME SCIENCES/HR, 307 College Road East, Princeton, NJ 08540 or via email to: info@physiome.com.** Physiome Sciences is an equal opportunity employer

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The blueprint for success is here.

Lexicon Genetics is a genomics-based biopharmaceutical company focused on harnessing the power of molecular genetics for the discovery of novel gene-based therapeutics. Our proprietary gene trapping technology provides rapid and efficient access to the transcribed portion of the genome and enables the elucidation of gene function by insertional mutagenesis at an unprecedented rate. In addition, our rapidly expanding homologous recombination program efficiently generates custom alleles (e.g. subtle mutations, knock-in's, conditional mutations) in the mouse germ line using our proprietary KO system.

In our Genomics Laboratories, we seek to fill the following positions:

FUNCTIONAL GENOMICS SCIENTISTS

Currently we have several opportunities for team oriented scientists to work on defining gene function using homologous recombination and high throughput gene trapping technologies. Experience with molecular biology, homologous recombination, cDNA library manipulation and phenotypic analysis of rodent models is desirable.

Lexicon Genetics employees enjoy a pleasant working environment in The Woodland, TX located 30 miles north of Houston where a full range of cultural experiences awaits. We are interested in expanding our team with talented and motivated candidates. Lexicon provides an outstanding benefits package and rewarding career opportunities as well as an unique opportunity to contribute to the genomics field.

Please send your resume and cover letter, to: **Human Resources, LEXICON GENETICS INC., 4000 Research Forest Drive, The Woodlands, TX 77381-4287, Fax (281) 364-3207 Email: resume@lexgen.com For more information on our company please visit our website at: www.lexgen.com** E.O.E.

LEXICON

Microbial Genomics at Cornell University

As part of a major university-wide genomics initiative, Cornell University is soliciting applications from outstanding candidates for faculty positions in various colleges. The Cornell Genomics Initiative (www.genomics.cornell.edu) is a coordinated effort by the university to build a core group of faculty as well as the supporting facilities that, in concert, will help advance progress in the field of genomics. It was initiated as a grassroots effort by more than 50 faculty who collectively formulated a vision for how Cornell University might build upon existing strengths in a variety of academic fields including the presence of world-class facilities in computer science, engineering and the life sciences. Following the launch of efforts in computational, plant and mammalian genomics, the next component of the Cornell Genomics Initiative focuses on microbial genomics. In all cases, a strong emphasis will be placed on identifying exceptionally talented, broadly trained individuals with strong experimental backgrounds who are interested in teaching and collaborative research. Five faculty hires are initially targeted; in some cases, departmental homes for the various appointments within a college will be open with the best match sought for each individual candidate.

FACULTY POSITIONS

Assistant Professor Cornell University seeks to hire an assistant professor with expertise in the field of microbial genomics. The successful applicant is expected to be an active participant in the Cornell Genomics Initiative, and develop an active externally funded research program in microbial genomics which may include, but not be limited to: comparative genomics and genome evolution, global regulation of gene expression in response to environmental stimuli, diversity of prokaryotic genomic systems, and bioinformatics. The primary teaching duties of the successful applicant will be an upper-level undergraduate/graduate course in bacterial genetics. This is a tenure-track, 12-month appointment in the College of Agriculture and Life Sciences with highly competitive start-up funds, laboratory space, salary and benefits. Applicants should provide Curriculum Vitae, list of publications, statement of research accomplishments, statement of future research interests, and should also arrange to have three letters of recommendation sent to: **Stephen Winans, Chair, Microbial Genomics Search Committee, Wing Hall, Cornell University, Ithaca, NY 14853.**

Assistant Professor The College of Veterinary Medicine at Cornell University seeks to hire a microbiologist with expertise in the field of genomics, to integrate into the university-wide Genomics Initiative. Candidates who have interest in the area of pathogenic bacterial infectious diseases of relevance to veterinary medicine will be of particular interest to the selection committee. This position in the Department of Microbiology and Immunology is one of three openings for microbiologists and reflects the College's increased commitment to bacterial pathogenesis. Teaching responsibilities will be both at the professional and graduate student levels. A Ph.D. with postdoctoral experience is a requisite; applicants who hold a D.V.M. or equivalent degree are especially encouraged to apply. Applicants should provide Curriculum Vitae, list of publications, as well as statements of research accomplishments and future research interests to: **David G. Russell, Chair, Department of Microbiology and Immunology, College of Veterinary Medicine, Cornell University, Ithaca, NY 14853.**

Assistant/Associate Professor (2 positions) Weill Medical College of Cornell University in New York City is establishing a Program in Persistent Infections. We seek candidates for tenure-track faculty positions who wish to pursue genetic and genomic approaches to host-pathogen interactions in diseases caused by agents such as, but not limited to, hepatitis C virus, *Mycobacterium tuberculosis, Helicobacter pylori* and *Chlamydia pneumoniae.* Faculty appointments at the Assistant Professor level are anticipated in the Department of Microbiology and Immunology; appointments within the Genetic Medicine Program and the Institute for Genetic Medicine will be offered as appropriate. Candidates should have Ph.D. or M.D. degrees and demonstrate the potential for establishing a vigorous, independent research program. Recruited faculty will enjoy generous start-up support and occupy new laboratories. In addition to participating in the Cornell Genomics Initiative in Ithaca, recruits may participate in the Graduate School of Medical Sciences, which is comprised of faculty from the Weill Medical College and the Sloan-Kettering Institute, as well as in the Tri-Institutional M.D.-Ph.D. Program, which consists of faculty from the Weill Medical College, the Sloan-Kettering Institute and The Rockefeller University. Applicants should provide Curriculum Vitae, statement of research interests and three letters of recommendation to: **Bernadette M. Mosellie, Genetic Medicine Recruitment Committee (CN), Box # 27, Weill Medical College of Cornell University, 1300 York Avenue, New York, NY 10021.**

Assistant/Associate/Full Professor The School of Chemical Engineering at Cornell University invites applications for a tenure-track position. Appointment at any rank is possible depending on the candidate's experience and achievements. The successful applicant is expected to be an active participant in the Cornell Genomics Initiative and to develop an active externally funded research program in chemical engineering with specific interest in microbial genomics. Possible emphases include, but are not limited to: metabolic and cellular engineering, bioinformatics and microfluidics. Applications should include current Curriculum Vitae, a statement of research interests, copies of key publications and the names of at least three references. Applications should be submitted to: **Genomics Faculty Search Chair, School of Chemical Engineering, 120 Olin Hall, Cornell University, Ithaca NY 14853-5201.**

Women and minority applicants are strongly encouraged to apply.
Cornell is an equal opportunity, affirmative action employer.

St. Jude Children's Research Hospital

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BIOINFORMATICS FACULTY POSITIONS

The Molecular Biotechnology division at St. Jude Children's Research Hospital is a newly established multidisciplinary academic initiative created to advance the state-of-the-art in high-throughput biotechnologies and in bioinformatics. The division is also home to the Hartwell Center for Bioinformatics and Biotechnology; a large shared resource facility that provides service and support to St. Jude faculty/staff in the areas of bioinformatics, DNA microarray, proteomics/mass spectrometry, and high-throughput DNA sequencing. The Bioinformatics group is building a High Performance Computing Facility designed to provide the institution and staff with the best possible supercomputer-class computing environment. We are currently seeking to recruit talented bioinformatics professionals interested in an academic career in this field and interested in lending their expertise to ongoing research programs at St. Jude. Successful candidates will possess a Ph.D. in molecular biology or computational biology with two years postdoctoral experience and expertise in sequence and protein structure similarity searching, data mining and presentation, biological interpretation of sequence information and gene expression data, and scientific programming in a Unix environment (Perl, Java, C, C++). Good communication and writing skills are essential. The appointments will be in the Molecular Biotechnology division at the Assistant to Full Member level depending on qualifications.

If you are interested in participating in the development of world-class bioinformatics capabilities in an exciting, interactive, and multidisciplinary environment with superb resources, please send your curriculum vitae to:

Clayton W. Naeve, Ph.D.
Chief, Molecular Biotechnology
Director, Hartwell Center for Bioinformatics & Biotechnology
St. Jude Children's Research Hospital
332 N. Lauderdale St.
Memphis, TN 38105
Tel: (901) 495-3861
Fax: (901) 495-2945
Email: clayton.naeve@stjude.org

EQUAL OPPORTUNITY EMPLOYER

mayo

Postdoctoral Fellowship
Molecular Neuroscience Program
Mayo Medical School
Rochester, Minnesota

Applicants are sought for a postdoctoral fellowship in the laboratory of Dr. Anthony J. Windebank (www.mayo.edu/research/cellular_neurobiology). The recipient of the fellowship will study the cellular and molecular basis of neuronal death and neuroprotective strategies with direct clinical relevance.

Applicants should hold the M.D. or Ph.D. degree and have a career interest in becoming an independent investigator. Candidates with expertise in molecular biology or biochemistry will be preferred. Please send curriculum vitae, summary of past accomplishments, and the names of three references to:

Anthony J. Windebank, M.D.
Molecular Neuroscience Program
Mayo Medical School
1501 Guggenheim Building
200 First Street SW
Rochester, MN 55905

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

SurModics

SENIOR MOLECULAR BIOLOGIST

SurModics is a leading biomedical technology company specializing in surface modification for medical devices and the development of new high-value biomedical products. We are currently seeking an experienced Molecular Biologist to provide project leadership for our growing genomic applications program. This position will be responsible for overseeing and performing experimental work involving design and development of products for nucleic acid immobilization and other genomics and proteomics applications.

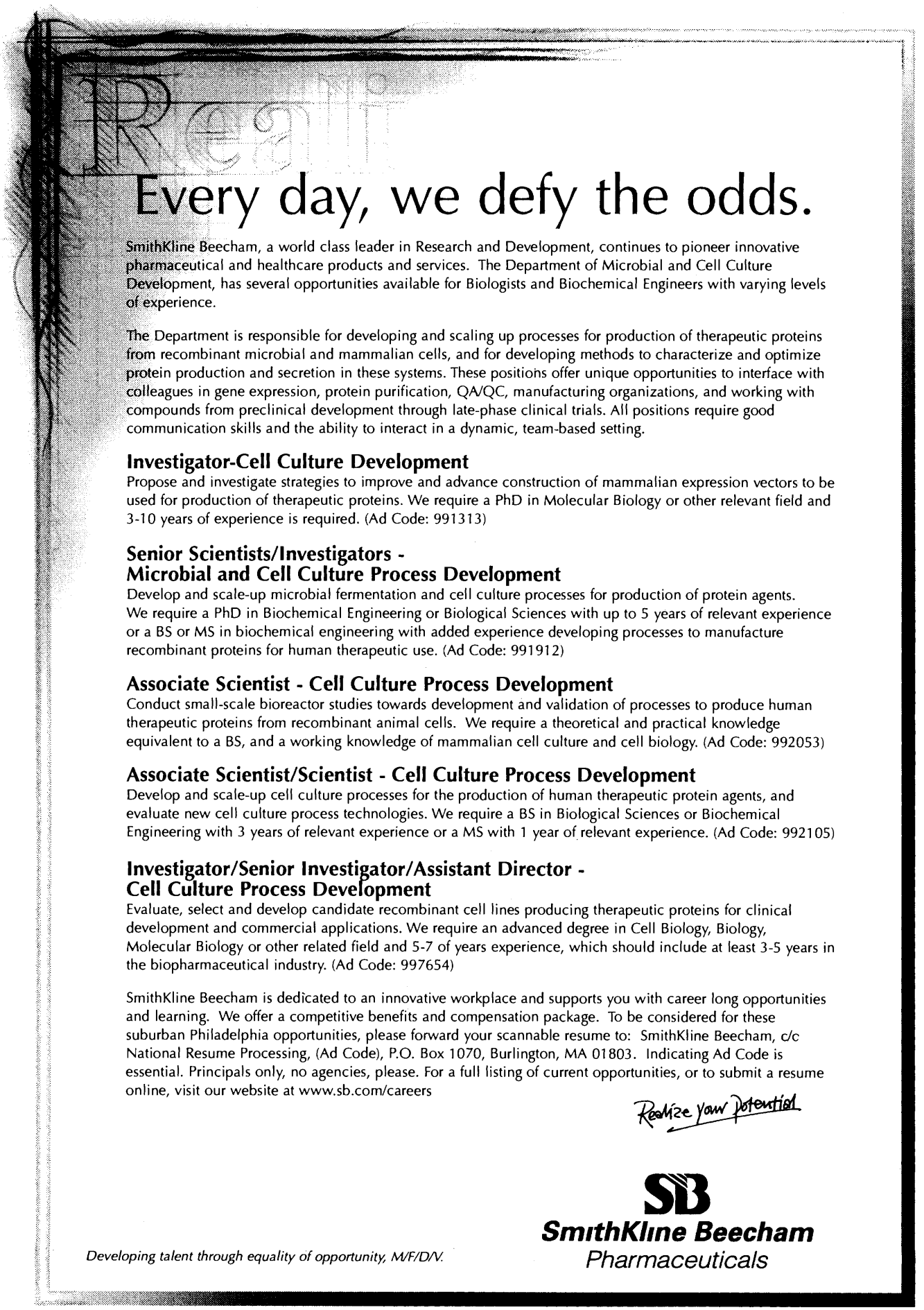
Qualifications for this position include:

- Ph.D. in Molecular Biology or equivalent background and experience
- Hands-on experience with and extensive knowledge of nucleic acid microarrays, hybridization assays and other molecular biology techniques
- Extensive knowledge of the biotechnology industry, particularly as it relates to the use of nucleic acids immobilized onto surfaces
- Excellent problem-solving, laboratory and computer skills
- Excellent written, verbal, and interpersonal communication skills

SurModics offers an excellent compensation and benefits package, including a bonus program, 401(k) with employer match, and stock options. Please send or fax a cover letter and resume, with salary history, to:

SurModics
Human Resources
9924 West 74th Street
Eden Prairie, MN 55344
Fax: (612) 829-2743
www.surmodics.com

SurModics is an Equal Opportunity Employer



Every day, we defy the odds.

SmithKline Beecham, a world class leader in Research and Development, continues to pioneer innovative pharmaceutical and healthcare products and services. The Department of Microbial and Cell Culture Development, has several opportunities available for Biologists and Biochemical Engineers with varying levels of experience.

The Department is responsible for developing and scaling up processes for production of therapeutic proteins from recombinant microbial and mammalian cells, and for developing methods to characterize and optimize protein production and secretion in these systems. These positions offer unique opportunities to interface with colleagues in gene expression, protein purification, QA/QC, manufacturing organizations, and working with compounds from preclinical development through late-phase clinical trials. All positions require good communication skills and the ability to interact in a dynamic, team-based setting.

Investigator-Cell Culture Development

Propose and investigate strategies to improve and advance construction of mammalian expression vectors to be used for production of therapeutic proteins. We require a PhD in Molecular Biology or other relevant field and 3-10 years of experience is required. (Ad Code: 991313)

Senior Scientists/Investigators - Microbial and Cell Culture Process Development

Develop and scale-up microbial fermentation and cell culture processes for production of protein agents. We require a PhD in Biochemical Engineering or Biological Sciences with up to 5 years of relevant experience or a BS or MS in biochemical engineering with added experience developing processes to manufacture recombinant proteins for human therapeutic use. (Ad Code: 991912)

Associate Scientist - Cell Culture Process Development

Conduct small-scale bioreactor studies towards development and validation of processes to produce human therapeutic proteins from recombinant animal cells. We require a theoretical and practical knowledge equivalent to a BS, and a working knowledge of mammalian cell culture and cell biology. (Ad Code: 992053)

Associate Scientist/Scientist - Cell Culture Process Development

Develop and scale-up cell culture processes for the production of human therapeutic protein agents, and evaluate new cell culture process technologies. We require a BS in Biological Sciences or Biochemical Engineering with 3 years of relevant experience or a MS with 1 year of relevant experience. (Ad Code: 992105)

Investigator/Senior Investigator/Assistant Director - Cell Culture Process Development

Evaluate, select and develop candidate recombinant cell lines producing therapeutic proteins for clinical development and commercial applications. We require an advanced degree in Cell Biology, Biology, Molecular Biology or other related field and 5-7 of years experience, which should include at least 3-5 years in the biopharmaceutical industry. (Ad Code: 997654)

SmithKline Beecham is dedicated to an innovative workplace and supports you with career long opportunities and learning. We offer a competitive benefits and compensation package. To be considered for these suburban Philadelphia opportunities, please forward your scannable resume to: SmithKline Beecham, c/c National Resume Processing, (Ad Code), P.O. Box 1070, Burlington, MA 01803. Indicating Ad Code is essential. Principals only, no agencies, please. For a full listing of current opportunities, or to submit a resume online, visit our website at www.sb.com/careers

Realize your potential

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SmithKline Beecham
Pharmaceuticals

Developing talent through equality of opportunity, M/F/D/V.

POSTDOCTORAL RESEARCH

The Wistar Institute, an independent research organization located on the University of Pennsylvania campus, currently seeks postdoctoral applicants in the areas listed below; these are permanent, year-round opportunities.

Transcriptional Regulation and Cancer. Investigation of the mechanism of cellular transformation by the oncogenic transcription factor c-Myc. Studies will focus on the role of the essential cofactor TRRAP. An understanding of the function of TRRAP in recruitment of multi-protein transcriptional regulatory complexes will be gained utilizing biochemical and genetic approaches. **Reply to Dr. Steven B. McMahon.**

Regulation of Epstein-Barr virus latency and reactivation in B-lymphocytes; mechanisms of gene expression and repression; DNA replication and cell cycle coordination of gene expression. Individuals with training in molecular biology, biochemistry, virology, and yeast genetics are encouraged to apply. **Reply to Dr. Paul Lieberman.**

Transcriptional Regulation. Research focuses on the function of histone acetylation by the adaptor GCN5 in transcriptional activation. Studies include genetic and biochemical approaches both in S. cerevisiae and in humans, focusing on the mechanism and biological role of protein complexes containing GCN5. Recent publications include: Wang et al (1998) Genes & Devel. 12:640-653; Gregory et al (1998) Molecular Cell. 1:495-505; Liu et al (1999) Mol. Cell. Bio. 19:1202-1209; Sterner et al (1999) Mol. Cell. Bio. 19:86-98. **Reply to Dr. Shelley L. Berger.**

Immunological tolerance and B cell development. To define the cellular and molecular interactions that influence autoantibody expression we are, first, determining how healthy mice regulate autoantibody expression and, second, identifying the critical lesions in these regulatory processes that lead to autoimmunity. Our current focus includes the role of Fas, Bcl-2, lyn, and aging on B cell repertoire formation. Recent publications include: Noorchashm et al (1999) Int. Immunol. 11:765-776; Mandik-Nayak et al (1999) J. Exp. Med. 189:1799-1814. **Reply to Dr. Jan Erikson.**

Analyzing gene expression in mouse and human immune systems using cDNA microarrays: gene profiling of stages of cutaneous T-Cell lymphomas, and the immune response in septic shock and Multiple Sclerosis. **Reply to Dr. Louise Showe.**

Successful candidates will have a Ph.D. and/or M.D./Ph.D. in the biological sciences. Please send a C.V. and three letters of reference to the **Human Resources Dept., Attn: (appropriate faculty member), The Wistar Institute, 3601 Spruce Street, Philadelphia, PA 19104.** For more information about The Wistar Institute, visit our Web site at www.wistar.upenn.edu. EOE/AA/M/F/D/V.

THE WISTAR INSTITUTE 1892

PRESIDENT

TEXAS TECH UNIVERSITY

The Presidential Search Committee and the Chancellor of the Texas Tech University System seek nominations and applications for the position of President of TEXAS TECH UNIVERSITY. Texas Tech, founded in 1923, is one of the leading universities in Texas and is part of the Texas Tech University System. The other system institution is the Texas Tech University Health Sciences Center (including schools of medicine, nursing, pharmacy and allied health) with campuses in Lubbock, Midland/Odessa, El Paso and Amarillo. Texas Tech University is located in Lubbock, Texas, in a community of almost 200,000 people on the South Plains of Texas.

The Texas Tech campus in Lubbock (1,839 acres in size) has a student population of more than 24,000 — including over 20,000 undergraduate and 4,000 graduate students. The University is comprised of 10 colleges and schools, including agricultural sciences and natural resources, architecture, arts and sciences, business administration, education, engineering, human sciences, and law, as well as the graduate school and honors college.

Texas Tech University offers 119 undergraduate, 99 masters and 50 doctoral degrees. Texas Tech is a Research II institute under the Carnegie Foundation classifications in effect for 1999. Texas Tech's library system is a member of the Association of Research Libraries.

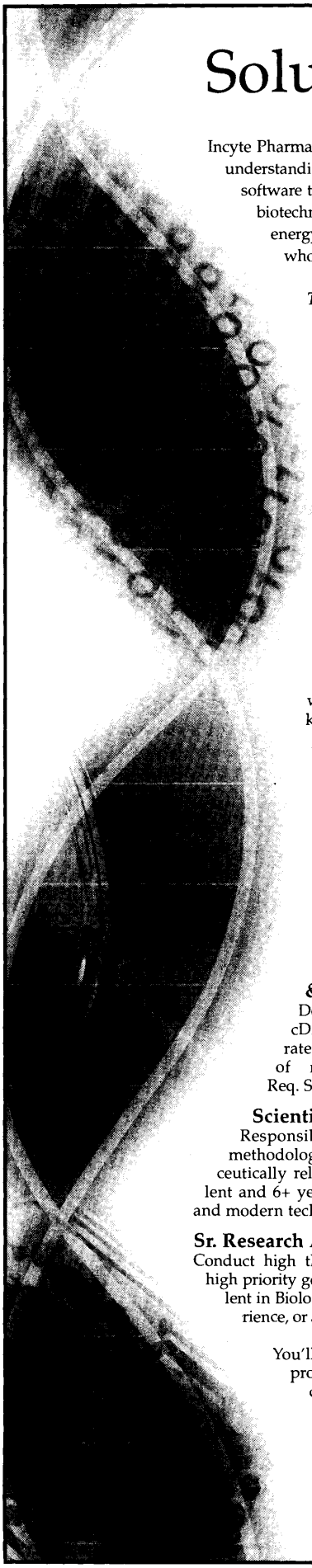
The President exercises broad authority and is responsible for all aspects of university administration. The President is responsible to the Chancellor of the Texas Tech University System and the Texas Tech University System Board of Regents.

Review of applications will begin immediately and will continue until an appointment is made. Texas Tech treats inquiries, nominations, and applications for this position and others in a confidential manner. Applicants should confirm in their letters that they wish their applications to be kept confidential. Texas Tech has retained the services of Heidrick & Struggles to assist with this search. Nominations, applications and inquiries should be directed to:

Mr. William J. Bowen
Heidrick & Struggles
233 South Wacker Drive
Suite 7000
Chicago, IL 60606-6402
(312) 496-1794
e-mail: wjb@h-s.com

For more information about Texas Tech University and the presidential search, please visit: http://www.texastech.edu

Texas Tech University is an Equal Opportunity Employer and encourages nominations and applications from minority and female applicants.



Solutions for Genomic Research

Incyte Pharmaceuticals is a leading provider of an integrated platform of genomic technologies designed to aid in the understanding of the molecular basis of disease. Our platform includes database products, genomic data management software tools and related reagents and services—information management tools critical to the pharmaceutical and biotechnology industries for drug discovery and development. The employees of Incyte provide the tremendous energy, talent and expertise that will help us revolutionize the world of healthcare. We're looking for individuals who share our vision and want to play a role in defining a new industry as we build our global organization.

The following positions are at our Palo Alto offices:

Therapeutic Area Directors

Set the strategic direction of our leading-edge expression database products in one of our high profile therapeutic research areas (CV diseases, metabolic disorders, oncology, neurodegeneration, allergy and inflammation). PhD and postdoctoral training in a biological science with 7-10 years experience and a record of research in one of the therapeutic areas. Req. SS/SD

Bioinformatics Scientist

Work on the design, optimization and automation of algorithms for identifying high value genes. PhD or equivalent in Biology, Math or Computer Science, 3+ years experience with bioinformatics algorithms and knowledge of UNIX, Perl and C/C++ programming. Req. TYJS

Scientific Programmer

Automate and optimize search algorithms to identify high value sequences. Requires experience with sequence analysis programs, including gene finding and motif analysis tools, Molecular Biology degree or knowledge, a BSCS/MSCS or equivalent, and knowledge of UNIX, Perl and C/C++ programming. Req. TYJS

Scientist, Library Normalization & Subtraction

Design complex strategies to generate cDNA libraries with high gene discovery rates. PhD or MS in Biology and 6+ years of molecular biology lab experience. Req. SD3689AC

Scientist/Associate Scientist

Responsible for R&D of novel cDNA library methodologies and saturation cloning of pharmaceutically relevant gene families. PhD/MS/equivalent and 6+ years of molecular biology lab experience and modern techniques required. Req. 3490

Sr. Research Associate/Scientist

Conduct high throughput expression analysis for new, high priority gene targets. Requires a BS/MS or equivalent in Biological Sciences and 5+ years relevant experience, or a PhD with relevant experience. Req. 3690

Sr. Research Associate/Research Associate, cDNA Library Research

Construct specialized cDNA libraries aimed at targeting rare and differentially expressed transcripts. MS/BS/equivalent in Biology and 3+ years of laboratory experience required. Reqs. 3241 and 3015

Research Associate/Sr. Research Associate (temporary)

Use DNA and protein analysis tools to edit full-length gene sequences from genomic and EST data. A BS or equivalent in Computer Science or Biology and PC and Mac skills are necessary. Req. TYRW

Research Assistants/Associates

Generate new full-length genes from pharmaceutically relevant gene families. Requires a BS or equivalent in Biology/Molecular Biology, computer/database skills and 1-2 years lab experience. Req. 3233

Another position with similar duties and skills as above plus 5'RACE and cDNA libraries is available. Req. 3691

Research Associate, Technology Development

Perform assay development, optimization, and troubleshooting to improve HTS production using molecular biology and biochemistry techniques. Experience with PCR and automated DNA sequencing, along with a BS or equivalent in Biology or Chemistry required. Req. 3389SM

For the positions above, please reply with resume and letter to: Incyte Pharmaceuticals, Inc., 3174 Porter Dr., Palo Alto, CA 94304, fax 650/845-4176, email employ@incyte.com.

At Incyte's advanced laboratory facility across the San Francisco Bay in Fremont, we design, manufacture and process GEM™ microarrays. Consider these challenging opportunities:

Research Associate, Assay Research

Design and conduct biological evaluations of technologies designed to develop methods to run GEM experiments supporting expression databases. Requires a BS or equivalent in Molecular Biology, Biology, or Biochemistry and 1-2 years of laboratory experience. Req. 3531SM

Scientist

Join a group focused on solving technical problems related to both molecular biology and high throughput automation and lead our efforts to build next-generation DNA microarray systems. A PhD or equivalent in Molecular Biology and 1-2 years of industry experience are necessary; familiarity with production issues desirable. Req. 2937SM

Apply for positions in Fremont with resume and letter to: Incyte Microarray Systems, 6519 Dumbarton Circle, Fremont, CA 94555, fax 510/739-2243, email microarrayjobs@Incyte.com.

You'll find we offer competitive salaries, an outstanding benefits package and significant opportunities for professional growth. Incyte is proud to be an equal opportunity employer, and recognizes the talent of its diverse workforce.

www.incyte.com

INCYTE

Carnegie Museum of Natural History

Pittsburgh, Pennsylvania

Curatorial Opportunities 2000

Curatorial Position in Systematic Botany
Applications from scientists with Ph.D. are invited for the position of Assistant or Associate Curator in the Section of Botany, particularly from candidates having interests in broad evolutionary problems and integrating morphological and molecular approaches. Desirable qualifications also include external funding for research and experience in curation, public education, and exhibits.

Curatorial Position in Botany/Paleobotany
Applications from scientists with Ph.D. are invited for the position of Assistant or Associate Curator in the Section of Botany, particularly from candidates having interests in systematics, biogeography, and paleoclimatology based on integrative study of modern and paleobotanical collections. Desirable qualifications also include external funding for research and experience in curation, public education, and exhibits.

Curator in Malacology and Invertebrate Paleontology
Applications from scientists with Ph.D. are invited for the position of Assistant or Associate Curator to oversee the Section of Malacology and Invertebrate Paleontology, particularly from candidates with research interests in systematics, biogeography and paleoclimatology and encompassing fossil and recent collections. Desirable qualifications also include external funding for research and experience in curation, public education, and exhibits.

Applicants should send curriculum vitae, addresses of three references, reprints, and letter describing professional goals by 1 March 2000 to: **Bradley C. Livezey, Dean of Science, Carnegie Museum of Natural History, 4400 Forbes Avenue, Pittsburgh, PA 15213.**

mayo

MAYO CLINIC
GMP VECTOR PRODUCTION FACILITY

Production Manager and Production/Quality Control Staff are sought to operate a new GMP Vector Production Facility established to support preclinical and phase I clinical gene therapy studies at Mayo Clinic, Rochester, Minnesota. A range of different viral and nonviral vectors will be produced in the facility. Experience in molecular biology, cell culture and/or laboratory management is required. Previous relevant experience is essential. Competitive salary and benefit package available.

Applications along with curriculum vitae and bibliography should be sent to:

Stephen J. Russell, MD, PhD
c/o Ms. Maureen Craft
Mayo Clinic
Guggenheim 18th Floor
200 First Street Southwest
Rochester, MN 55905

Informal inquiries should be directed to Dr. Stephen J. Russell by e-mail at: sjr@mayo.edu. The deadline for applications is February 11, 2000.

For more information about the Mayo Clinic Molecular Medicine Program you can visit our website at: http://www.mayo.edu/research/mmp/. For more information about Rochester, Minnesota and Mayo Foundation, you can visit the websites at: http://www.rochestermn.com/ and: http://www.mayo.edu./.

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

Postdoctoral Training Opportunities in Microbial Pathogenesis

State University of New York at Buffalo

Postdoctoral fellowships supported by an NIH training grant are available for talented scientists interested in the pathogenesis and molecular biology of bacteria, viruses and parasites. The Center for Microbial Pathogenesis is a vibrant and interdisciplinary research group housed in the new research building within the School of Medicine and Biomedical Sciences. The research areas of the participating Center faculty are described below. Further details are available at **www.smbs.buffalo.edu/cmp.**

Anthony Campagnari	Pathogenesis of *M. catarrhalis* and *H. ducreyi* infections
John Hay	Molecular genetics of *Varicella zoster* virus and hepatitis C virus
Philip T. LoVerde	*Schistosoma:* Gene expression, immunological mechanisms, vaccines
Thomas Melendy	Mechanisms and regulation of human and viral DNA replication
Edward G. Niles	Regulation of vaccinia virus and *Schistosoma mansoni* gene expression
Mark R. O'Brian	Metabolic regulation in bacteria; nutritional control of gene expression
Laurie K. Read	Genetic regulation in *Trypanosoma brucei* and *Plasmodium falciparum*
Thomas Russo	Pathogenesis and vaccine development in extraintestinal *E. coli* isolates
William T. Ruyechan	Molecular biology of herpes viruses and *Trypanosoma brucei*
Murray W. Stinson	Pathogenic mechanisms of *Streptococcus* species
Noreen Williams	Control of gene expression in *Trypanosoma* and *Plasmodium*

Candidates must possess a Ph.D. or M.D. degree. Minorities and women are strongly encouraged to apply. Only US citizens and permanent residents are eligible for these positions. Applicants should send a curriculum vitae, a description of research interests identifying potential advisor(s), and the names of three references to: **Mark R. O'Brian, Department of Biochemistry, 140 Farber Hall, State University of New York at Buffalo, Buffalo, NY 14214.**

The University at Buffalo is an affirmative action/equal opportunity employer

UMass Medical School

Assistant/Associate Professor Tenure-Track Faculty Positions

Brudnick Neuropsychiatric Research Institute

The University of Massachusetts Medical School (UMMS) Department of Psychiatry invites applications for assistant and associate professor level tenure-track faculty positions in its new Brudnick Neuropsychiatric Research Institute (BNRI). The Institute will be under the future direction of Edward Ginns, M.D., Ph.D. Program facilities include a new state-of-the-art laboratory building with extensive animal, office and conference facilities. Preference will be given to applicants with interdisciplinary backgrounds and research with an emphasis on mental illness, bridging areas of clinical/molecular psychiatry, neurology, imaging, clinical neuroscience, neurobiology and neurogenetics research. We seek applications from highly motivated candidates (MD and/or PhD or DVM) with "bench to bedside" research interests in a) cellular, molecular, and developmental neurobiology; b) the study of model systems (such as drosophila, nematodes, zebrafish, and mice); c) neurogenetics (including genome based analysis of complex traits in model systems and humans and the generation and phenotypic characterization of transgenic and gene targeted mouse models), cytogenetic studies, QTL analyses and transcript expression profiling (in situ and microarray technology); d) statistical genetics; and e) proteomics. In this highly collaborative environment successful candidates are expected to establish an outstanding, independent research program and participate in graduate, professional school, and clinical/research fellowship teaching programs. Opportunities for joint appointments in other clinical and basic science departments are available. Salary and fringe benefits are competitive and there is an attractive recruitment package.

Interested candidates should send their curriculum vitae, the names and complete addresses of at least five references, and a description of current and future research interests to: Paul S. Appelbaum, M.D., Professor and Chair, Department of Psychiatry, BNRI Faculty Search, University of Massachusetts Medical School, Room S7-866, 55 Lake Avenue North, Worcester, MA 01655. Review of applications will begin upon their receipt. The University of Massachusetts Medical School is an equal opportunity/affirmative action institution. (www.umassmed.edu)

UMASS

Join a leader in Pharmaceutical innovation.

At Schering-Plough Research Institute, our scientists are discovering innovative therapeutic agents that challenge humankind's most debilitating diseases. And we're doing it at our Northern New Jersey state-of-the-art research campuses where you can enjoy the benefits and prestige of working for a global leader. Join us now as we shape the future of pharmaceutical innovation.

Biotechnology

PhD Scientist

PhD in Cell Biology, Molecular Biology or related field and 0-2 years of industrial or postdoctoral experience required. Experience in cell culture required. Skill in recombinant protein expression in various host systems and experience in cell line testing and maintenance a plus. **Job Code: XHXBD9912**

Genomics

MS Research Assoc. - Molecular Biology/Biochemistry

MS in Molecular or Biochemistry and work experience using standard biochemical and molecular techniques such as gene cloning and sequencing and/or protein purification required. **Job Code: XHXDD9124**

PhD Scientist

PhD in Molecular Biology or related discipline is needed to handle expression profiling, microarrays and quantitative PCR for the discovery/validation of novel drug targets for cancer chemotherapy. Two years' postdoctoral experience required. Expertise in molecular biology, genomics/bioinformatics and cancer research preferred. **Job Code: XHXDD8177**

Postdoctoral Fellow

PhD in Molecular Biology, Neurobiology or related discipline with strong, working knowledge of current molecular biology techniques, including cDNA cloning, PCR and automated DNA sequencing and characterization of receptors required. Experience with *in situ* hybridization, receptor autoradiography or Immunocytochemistry in tissue highly desirable. **Job Code: XHXTM99356**

Immunology

Postdoctoral Fellow

MD/PhD with strong background in immunology needed to perform targeted mutagenesis of orphan GPCRs and analysis of several recently generated chemokine knockouts. Previous experience with disease models and strong organizational skills required. **Job Code: XHXTM0016**

BS/MS Research Assoc. - Molecular Biology

BS/MS with 3-5 years of related experience in molecular biology with a focus on PCR technology. Will utilize Taqman technology to profile gene expression in normal and diseased tissue as part of a functional genomics effort and will provide molecular biology support for cloning group. **Job Code: XHXDD9184**

BS/MS Research Assoc. - Histology

BS/MS in Biology or related field and 3+ years' experience in histological techniques (*including tissue processing, tissue sectioning with microtome and cryostat, immunohistochemistry and in situ hybridization*) required. Experience in special staining, computer assisted imaging analysis, confocal imaging analysis and *in situ* receptor binding a plus. **Job Code: XHXDD9182**

Analytical Chemistry

BS/MS Analytical Chemist (HPLC/LC-MS)

BS/MS in Chemistry and 2-4 years' experience (0-2 *years with* MS) in Analytical Chemistry required, as is proficiency in HPLC instrumentation and methodology, including experience with LC-MS instrumentation for rapid de-replication and characterization of potential leads from natural product extracts. Knowledge of/experience with Oracle database management systems highly desirable. **Job Code: XHXDD00MC**

Microbiology

BS/MS Research Assoc. - Microbiology

BS/MS in Microbiology or Molecular Biology plus a background in computer science required to research the isolation of novel microorganisms from natural habitats using traditional and molecular approaches, as well as be responsible for growth, fermentation and maintenance of actinomycetes and fungi. **Job Code: XHXDD9970**

Pharmacology

BS/MS Research Assoc. - Molecular Biology/Biochemistry

BS/MS in Neuroscience, Biochemistry, Molecular Biology or related discipline required with a minimum of 2 years' related laboratory experience with cell and tissue assays such as radioligand binding, western blotting, and fluorescence assays. **Job Code: XHXDD9107**

BS/MS Research Assoc. - Pharmacology/Physiology

This position in the CNS/CV Biological Research organization requires a BS/MS in Pharmacology, Physiology or related discipline. Experience in isolated tissue/cell culture patch-clamp electrophysiology is a plus. **Job Code: XHXDD9911**

Structural Chemistry

Postdoctoral Fellow

PhD in Chemistry, Biochemistry or related field and 2 years' experience required to work on development of LC-NMR and other NMR projects on small molecules. Training in NMR, familiarity with NMR pulse sequences (especially gradient experiments) and an interest in the application of NMR in different areas of pharmaceutical research vital. Knowledge of HPLC and Varian NMR equipment desirable. One year assignment could be extended into two. **Job Code: XHXTM9448**

Virology

PhD Scientists - Molecular Biology/Biochemistry (CNS/CV)

PhD in Molecular Biology with 2-5 years' postdoctoral/industry experience required to join team developing new therapies against Hepatitis C Virus (HCV). Projects focus on HCV helicase enzyme research requiring enzymology of helicases and/or replication enzyme background, and HCV protease research requiring knowledge of expression systems and cell based assays. **Job Code: XHXDD9143**

PhD Postdoctoral Fellow

PhD with experience in molecular virology, preferably with viral genetic heterogeneity. Focus on establishing novel assays for the study of HCV genetic heterogeneity. **Job Code: XHXTM99534**

For additional information or to apply online visit our web site at www.sp-research.com

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

For prompt, confidential consideration, we invite you to forward your resume which MUST include the Job Code for your position of interest to: **E-mail: sprisc@isearch.com** or send to: **Human Resources-CL, Schering-Plough Research Institute, 2015 Galloping Hill Road, Kenilworth, NJ 07033-1300.** We are an equal opportunity employer. We regret we are unable to respond to each resume. Only those selected for an interview will be contacted.

Schering-Plough Research Institute

Using Science for Human Advantage

Opportunities for Research Scientists

Tularik, Inc. is an established leader in the biopharmaceutical industry, dedicated to the discovery and development of novel therapeutic agents that regulate gene expression. A combination of exciting scientific developments and recent successes has created a rare opportunity for several dedicated professionals to join our expanding multidisciplinary R&D team at our San Francisco Bay Area campus.

Scientist
Immune Disorders Program

The successful candidate will have hands-on experience in molecular and cellular immunology, signal transduction and the biology of Th1/Th2 differentiation and will use this expertise to identify drug discovery targets and establish novel assays. (Job# S0128-IDP)

Scientist
Cancer Program

You will use your extensive background in the field of cell cycle regulation and/or cytoskeleton dynamics to identify and validate novel drug discovery targets and establish corresponding assays for our Cancer Program. (Job# S0128-CP)

Scientist
Orphan Nuclear Receptors Program

You will use your expertise in elucidating mechanisms of transcriptional regulation and co-activator interaction, to conduct research on all aspects of orphan nuclear receptor biology, as it relates to drug discovery. (Job# S0128-ONRP)

Bioanalytical Scientist
Pharmacology

As a member of our Pharmacology and Preclinical Development Department, you will provide quantitative bioanalysis for compounds proceeding through preclinical and clinical development. Experience with bioanalysis using LC/MS/MS in a GLP-compliant environment is required. (Job# S0128-BSP)

Scientist
Technology Development

As a member of our Lead Discovery Department, you will develop a CCD camera-based screening system and other novel technologies that will enhance our drug discovery efforts. The successful candidate will have hands-on experience with CCD cameras and a working knowledge of multiple assay and detection formats. (Job# S0128-TD)

Scientist
Protein Crystallography

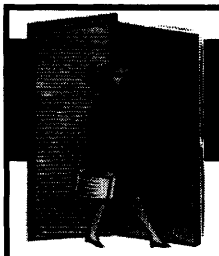
As a member of our interdisciplinary structural biology team, you will elucidate crystal structures of protein/ligand complexes that will form the basis for structure-assisted drug design efforts in cutting-edge research projects. A proven track-record of accomplishment in protein crystallography is essential. (Job# S0128-PC)

These projects provide exciting opportunities for outstanding scientists to carry out leading-edge research and creative drug discovery. All positions require a Ph.D. and relevant postdoctoral experience. Applicants with experience in high throughput screening are highly desired. In addition to challenging and empowering our employees, Tularik offers experienced leadership, employee stock options, a competitive salary and benefits package, and a collaborative and stimulating research environment that recognizes achievement. If you are interested in joining our research team, please submit your resume to:

Tularik, Inc.
Two Corporate Drive
HR Department
Attn: (Job#____)
South San Francisco, CA 94080
Fax: (650) 825-7303
Email: resume@tularik.com

Tularik

www.tularik.com



Our Doors Are Open... So Is Your Future!

Cato Research Ltd. is a contract research organization with locations in Research Triangle Park, NC, Montreal, Canada, Rockville, MD, San Francisco, CA and Tel Aviv, Isreal which engages in pharmaceutical drug development and FDA registration on behalf of clients in the pharmaceutical and biotechnology industries. We have exciting opportunities for individuals to fill the following *non-laboratory* positions:

SCIENTISTS
(experience in Intellectual Property, Oncology, Cardiology or CNS preferred)

CLINICAL RESEARCH PHYSICIAN

CLINICAL RESEARCH FELLOWS
(submit writing sample)

Cato Research Ltd. offers unique opportunities, a complete salary and benefits package, and a creative, family-friendly environment in which to grow. For consideration, please send your resume to: **Job 900, Cato Research Ltd., 200 Westpark Corporate Center, 4364 S. Alston Ave., Durham, NC 27713-2280.** Must reference position title and this journal in cover letter. No phone calls please. EOE.

For more detailed information on these and other job opportunities, please visit our website at:

www.cato.com

CATO RESEARCH

Postdoctoral Fellowships & Technician Position

Several postdoctoral positions are available at the Stowers Institute for Medical Research to investigate molecular mechanisms governing adult stem cell regulation in both Drosophila and mammalian systems. Our main focus is on identifying growth factors and other molecules involved in the regulation of Drosophila ovarian stem cell self-renewal, proliferation and differentiation using a combination of molecular, genetic, biochemical and cell biological approaches (Xie and Spradling, 1998, Cell 94). The Stowers Institute is a newly established private organization dedicated to becoming one of the world's leading research institutions in cell and developmental biology and genetics by recruiting world-class scientists. The Institute provides very competitive salaries and benefits and outstanding opportunities for training within a stimulating and interactive environment under the directorship of Dr. Robert E. Krumlauf. Postdoctoral fellows and technicians will work in a well-funded and state-of-the-art lab equipped with the most advanced technology.

Postdoctoral fellowships are awarded to creative and motivated individuals with recent Ph.D. or M.D. degrees based on their qualifications during 2000. Candidates with research experience in genetics, cell biology, developmental biology and/or primary cell culture are particularly encouraged to apply. **Lab technician** candidates with recent B.S. or M.S. degrees in biology or related fields will be considered.

To apply, submit a cover letter describing your research interests, CV and the names and addresses of three references to Dr. Ting Xie, Stowers Institute, 1000 East 50th St., Kansas City, MO 64110, or e-mail to tgx@stowers-institute.org. For more information, visit our Web site at www.stowers-institute.org.

STOWERS INSTITUTE FOR MEDICAL RESEARCH

The Stowers Institute is an EOE.

THE **BAYER** FACTS:

Bayer:

A premier healthcare company for the 21st century.

Our business is to significantly improve health worldwide.

People are the heart of our company.

Our corporate culture inspires and commits all to do their best.

Changing the world with great care

As part of the growth of biopharmaceutical Research and Development activities in Bayer, we have a number of openings for talented and highly motivated scientists at the Bayer Biotechnology Center in Berkeley, CA.

The Biotechnology Center emphasizes innovative, multidisciplinary team-oriented research that is both personally, scientifically, and professionally rewarding. Explore the following opportunities for individuals with excellent communication skills and the proven ability and desire to work in a multidisciplinary, team-oriented environment.

■ RESEARCH SCIENTIST

Bioinformatics

Join our Berkeley Bioinformatics Group if you are interested in applying bioinformatics to biological problems. Analyze molecular, genomic and gene expression data in a disease-focused manner to identify new therapeutic proteins and drug targets. Work with interdisciplinary disease-oriented project teams and bioinformatics. Requires a PhD or Masters degree with 5+ years' experience in Molecular Biology, Genomics, Computer Science, or related field. Demonstrated experience in sequence database searching, Unix OS and shell, gene expression data analysis, and analysis of large data sets essential. Job Code BK-0532EB

■ RESEARCH SCIENTIST, ASSOCIATE SCIENTIST

Phage Molecular Biology

The Research Scientist will manage an antibody discovery group utilizing phage display technology. Contribute to a number of project teams and develop novel approaches to the discovery and validation of novel protein therapeutics. Requires a PhD in Biochemistry, Molecular Biology or related field, and 2+ years of post-doctoral experience with phage display and protein engineering technology. Supervisory experience is essential. Job Code BK-0356EB

The Associate Scientist will report to the Research Scientist above. Requires a BS or MS in a related field and 2+ years of applicable experience. Job Code BK-0471EB

■ SCIENTIST

Mass Spectroscopy

Responsible for characterization and identification of proteins from complex and enriched mixtures using electrospray ion-trap and MALDI mass spectrometry. By effective integration of MS techniques, you will contribute to the discovery of novel biological activities and characterization of disease-relevant biological systems. Requires a BS or MS in Biochemistry, Analytical Chemistry or related field, and 2+ years' demonstrated hands-on experience using mass spectrometry for protein identification. Job Code BK-0479EB

■ RESEARCH ASSOCIATE

Molecular Biology

Collaborate with pharmacology and cell biology groups to design experiments to assay the function of novel genes. Involved with expression and modulation of genes in vitro and in vivo, requiring experience with the design and use of viral and non-viral vectors. Requires a BS or MS in Biochemistry, Molecular Biology or related field, and 2+ years of relevant experience. Must have molecular biology skills, including cloning, RNA extraction, northern analysis, and extensive tissue culture experience. Strong communication skills essential. Job Code BK-0537EB

■ QA VALIDATION SCIENTISTS

- **Facility and Utilities Validation** (Job Code BK-0359EB)
- **Equipment, Instrument and Cleaning Validation** (Job Code BK-0360EB)
- **Automated Control and Computer Systems Validation** (Job Code BK-0361EB)

Requires an MS degree in engineering or related field with 6+ years of directly applicable experience in the pharmaceutical industry. Supervisory background is desirable.

■ RESPIRATORY PHYSIOLOGIST

Pharmacology

Requires a PhD scientist with background in respiratory disease (asthma and COPD) and experience in small and large animal models (primate experience preferred) of respiratory disease. Some industrial experience also preferred. Job Code BK-BT01EB

■ TUMOR IMMUNOLOGIST

Our Pharmacology Department seeks tumor biologist with a strong immunology background. Use your expertise in cancer immunotherapy to develop in vitro and in vivo models for testing and screening potential therapeutic candidates. Initiate a research program aimed at understanding tumor immune escape mechanisms. Requires a PhD in Biology, Immunology or related discipline and 1+ years of pharmaceutical industry experience. Strong background in animal tumor models and cellular immunology needed. Job Code BK-BT02EB

■ DEVELOPMENTAL BIOLOGIST

The Pharmacology Department seeking a highly motivated molecular geneticist to join our Functional Genomics team. Develop in vitro and in vivo models for testing and screening novel gene products. Help manage a research program aimed at understanding novel gene function. Requires a PhD in Biology, Genetics or related discipline, and strong background in developmental biology and/or physiology and experience with animal models as well as molecular biology techniques. Job Code BK-BT03EB

■ GENERAL MANUFACTURING SUPERVISOR

Responsible for safety, GMP and coordination activities for one of our plants, including ensuring strict regulatory compliance, training and equipment troubleshooting and maintenance. Requires a BS in Biology, Microbiology, Biochemistry or related discipline, with 6+ years' production or similar experience. A solid understanding of cGMP and FDA regulations is essential. Thorough knowledge of manufacturing documentation systems also needed. Supervisory experience essential. Job Code BK-464GL

Bayer

Pharmaceutical Division

Bayer offers an attractive compensation and benefits package. For immediate consideration, please forward your resume to bayerpharm@home.com or fax (510) 705-7874; or send to: Bayer Corporation, Pharmaceutical Division, P.O. Box 9060, Gaithersburg, MD 20989. Fax: (888) 805-7474. E-mail bayerpharma@alexus.com Please indicate Job Code of interest on all correspondence. No agencies or phone calls please. For more information on Bayer, search: http://www.bayerus.com

An Equal Opportunity Employer M/F/D/V. Bayer Corporation is committed to enhancing and maintaining cultural diversity within our work environment.

POSTDOCTORAL RESEARCH IN VISION AND EYE DISEASES

An Affiliate of Harvard Medical School

The Schepens Eye Research Institute, an affiliate of Harvard Medical School and the world's largest independent organization solely devoted to research in the mechanisms of vision and eye diseases, has a number of open postdoctoral positions. Interested parties should forward their CV and three letters of reference to the appropriate faculty member at:

The Schepens Eye Research Institute
Harvard Medical School
20 Staniford Street
Boston, MA 02114

Dong Feng Chen, Ph.D. Molecular mechanisms of optic nerve regeneration and neural differentiation.

Patricia D'Amore, Ph.D. Studies of the cellular and molecular regulation of vascular development and growth.

Reza Dana, M.D. Cytokine/chemokines and costimulation in corneal transplantation.

Ilene Gipson, Ph.D. Regulation of mucin gene expression and the role of mucins in protection of the ocular surface.

Andrius Kazlauskas, Ph.D. Investigation of how signaling by receptor tyrosine kinases interfaces with cell cycle progression.

Mara Lorenzi, M.D. Cellular and molecular mechanisms in the pathogenesis of diabetic retinopathy, with emphasis on apoptosis.

Santa J. Ono, Ph.D. Transcription factor-based immune modulation of allergic diseases and cancer.

Max Snodderly, Ph.D. Visual nervous system: functional roles of macular pigment of primate retinas and organization of visual cortex.

J. Wayne Streilein, M.D. Studies in the cellular and molecular basis of ocular immune privilege and its disruption during corneal and retinal transplantation.

Michael Young, Ph.D. Retinal transplantation, biology of stem cells.

Fu-Shin X. Yu, Ph.D. The molecular and cellular biology of tight junctions and their role in vascular endothelial permeability and barrier function in normal and diseased states such as diabetes and corneal infection.

WE ARE AN EQUAL OPPORTUNITY EMPLOYER, M/F/H/V.

NASA GODDARD SPACE FLIGHT CENTER

Chief, Earth and Space Data Computing Division

The NASA/Goddard Space Flight Center (GSFC), NASA's designated Center of Excellence for scientific research, maintains a world-class high performance data intensive computing center in support of the Earth and space sciences. GSFC is aggressively seeking applicants for the position of Chief, Earth and Space Data Computing Division (ESDCD), who will have overall responsibility for the conduct, management, planning and implementation of Goddard's Earth Science computing center serving NASA-supported scientists nationally. In the performance of these responsibilities, the Division chief manages three branches, Science Computing, Science Communications Technology, and Applied Information Science.

This is a uniquely exciting time for ESDCD as information science and technology are emerging as principal efforts within NASA and at GSFC. A joint acquisition of a large new computational facility is planned in support of several major NASA/GSFC programs. The High Performance Computing and Communication Earth and Space Science Project (HPCC/ESS) is entering a new phase of building computational science communities to accomplish NASA's challenging mission objectives. New opportunities for collaboration with the University community are being established.

The successful applicant will join the Earth Sciences Directorate and be responsible for providing a vision for information science in the pursuit of NASA goals; programmatic and organizational management; development and implementation of functional responsibilities; personnel management; overseeing the safety, security, and quality goals; management of budgetary actions; long-range technical planning, implementation and operations.

The selectee reports to the Director of the Earth Sciences Directorate and participates as a peer with Science Lab Chiefs and other staff in directorate business, planning and implementation efforts.

Candidates with experience in Earth and space computational science, management of large-scale computing and mass storage systems, software engineering, science data visualization, information systems, and ground and space telecommunications systems are encouraged to apply.

This is a Senior Executive Service (SES) position in the Federal Government. The salary is commensurate with the experience of the successful candidate.

Applicants must submit either an "Optional Application for Federal Employment" (OF-612) or SF-171, "Application for Federal Employment," or a resume. In addition, applicants should submit a professional curriculum vita, a current list of referred publications, and a cogent (approximately 1000-word) statement of career interests. By 1 March 2000, applications should be forwarded to:

NASA's Goddard Space Flight Center
Human Resources Operations Office, Code 113
Attn.: Ms. Diedra Williams
Greenbelt, MD 20771

For more information about position requirements and additional application procedures, visit our web site at http://itjobs.gsfc.nasa.gov

Equal Opportunity Employer, U.S. Citizenship Required.

AVIGEN

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

DIRECTOR OF CLINICAL/REGULATORY AFFAIRS

Exciting opportunity for the right individual to be responsible for representing Avigen's interests, both internally and externally, by establishing relationships with key leaders, contract clinical organizations, and other partners for leading the clinical development of AAV based gene therapy products for the treatment of Hemophilia, which is currently under way, and other major diseases in the future.

This position will be responsible for directing and implementing all clinical development activities and strategies to achieve the clinical program objectives. Will design, compose, and implement approved clinical protocols and direct the assembly of clinical sections of regulatory submissions. Candidate will also manage the monitoring of clinical studies in progress ensuring they are conducted on time and appropriately.

Minimum requirements are a medical degree and 4+ years' previous clinical research experience. Must have a demonstrated record of Phase I, II or III clinical achievement as well as a history of successful relationships with investigators. Must be knowledgeable in FDA regulations and basic statistical procedures. Must have excellent verbal and written communication skills.

DEVELOPMENT SCIENTISTS

We are seeking highly qualified scientists to fill key roles in the development of recombinant AAV vectors for human clinical trials. Successful candidates should have a strong background in virology/viral vectors, mammalian cell culture, vector purification, and process optimization, scale-up, and validation. A good working knowledge of relevant FDA regulations and cGMP required. Candidates must have a PhD degree, 3+ years of relevant experience, and excellent communication skills.

DEVELOPMENT ASSOCIATES

We are seeking experienced Development Associates to play key roles in assay development / product characterization, and optimization / scale-up of cell/viral culture, and vector purification processes. Candidates must have a BSc or MSc degree, and 3+ years relevant experience. Industry / cGMP experience a plus.

We offer competitive salaries, benefits paid in full by the Company, stock options, 401(k), growth potential and an exciting opportunity to work with a dynamic team focused on exploring the impact of gene therapy on selected human diseases.

To apply, email/send/fax resume, **SPECIFIYING POSITION OF INTEREST**, to: Avigen, Inc., Human Resources, 1201 Harbor Bay Parkway, Suite 1000, Alameda, CA 94502; e-mail: sdelph@avigen.com, fax: (510) 748-7155. EOE - Principals Only – NO CALLS.

We are looking for outstanding scientists at all levels with diverse backgrounds who share a common commitment to advance genes from state-of-the-art genomics databases to validated product opportunities. Scientists will be responsible for driving their own projects and at the same time, work collaboratively to achieve team goals. Good communication skills are critical for working across teams of expertise and multiple research sites. Current openings for qualified and interested candidates are described below:

GENOMICS

Monsanto is a world-leader in the development of genomics technologies for agricultural products with a mission of abundant food and a healthy environment. The rapid growth of plant and microbial genomics databases as well as functional genomics characterization of whole genomes is rapidly making it possible to generate innovative, next generation product opportunities. Monsanto has forged a network of genomics collaborations with leading genomics biotechnology companies, established Cereon as a premier plant functional genomics company and has developed other internal sequencing and functional genomics efforts providing a challenging and empowered environment for scientists striving for unprecedented personal and team achievements in the field of agriculture. Scientists able to effectively mine these genomics databases, think creatively about gene function and who have the ability to work in multidisciplinary teams will be poised to lead this new wave of products. Monsanto's ability to move from gene to seed in an integrated environment ensures that scientists working at the cutting edge of genomics discoveries will realize the benefits of their contributions in the form of innovative new products in a global market place. ***These positions are located in St. Louis, MO.***

Molecular Plant Physiologist

Requires a Ph.D. and two years post-doctoral research experience in the molecular approaches to plant physiology. Research experience in nitrogen utilization or in abiotic stress physiology and plant responses to the environment is preferred. The ability to quantitatively assess changes in whole plant physiology using radioactive, HPLC, LI-COR, PAM2000 and other assays is also required. **Ad Code 99-3512**

Gene Expression Research, Senior Scientist

We are seeking outstanding scientists with a research background in transcription factors who have an interest in using new technologies such as transcription profiling combined with reverse genetics approach in Arabidopsis to study gene regulation. Candidates must be willing to work in a multidisciplinary environment focused on the rapid development of new agricultural products. Ph.D. and a minimum of 2 years post-doctoral research experience in a molecular biology and genetics of signal transduction and transcriptional control required. Experience using bioinformatics tools to mine genomics databases necessary. **Ad Code: 99-3513**

Plant Genomics Scientists

Candidates are required to validate new Ag product concepts based on genes from genomic databases. BS with 5 years of experience, or MS with 2+ years of experience, in plant molecular biology and genetics is essential. You should be able to learn and apply bioinformatics tools for data mining and sequence analysis. Previous experience in site-directed and random mutagenesis, transgene construction, full length cloning, ribonuclease protection assays or quantitative PCR is desirable. Research background in developmental biology, signal transduction, transcriptional control of gene expression and molecular plant physiology is ideal. Please submit details of 2 references as well as resume. **Ad Code: 99-3514**

Plant Genomics Scientist - Quantitative Expression Analysis

Using previous experience in assay development and validation, you will bring together transcriptional profiling, quantitative PCR, ELISA and robotics technologies to quantitatively measure endogenous and transgene expression. Candidates must have a BS with 5 years experience or a MS with a minimum of 2 years experience in molecular biology techniques. Previous experience in expression analysis using Taqman technology and extracting RNA from plant tissues is required. Experience with other expression technologies including quantitative PCR, microarray and/or northern blot technology is highly desirable. Additional experience in site-directed mutagenesis and full length cloning is helpful. Computer skills with knowledge of database searching, sequence analysis and data presentation are essential along with the ability to work in a team-based environment. **Ad Code 99-3515**

Research Plant Biochemist

Candidates will move novel genes from genomics databases into heterologous expression systems to facilitate purification and functional characterization. Candidates will also be challenged to develop biochemical assays to assess the phenotype of novel genes expressed in transgenic plants. Requires a BS with 5 years experience or MS with a minimum of two years laboratory experience in biochemistry or molecular biology. Experience in HPLC assay development or ELISA development is required. The ability to effectively learn and apply bioinformatics tools to analyze DNA and protein sequence is also required. Previous experience in expression, purification and kinetic characterization of recombinant proteins in E. coli or other heterologous systems is desirable. **Ad Code 99-3516**

BIOINFORMATICS

We're putting together a team of top professionals who can work together to help us achieve our goals. You'll have a chance to make your mark and work with all aspects of our business relating to bioinformatics. This includes everything from pharmaceuticals to agriculture to genomics. It's silicon valley technology, right here in the Midwest. As you'd expect, our environment is cutting-edge and entrepreneurial. We can offer you the feel of a start-up and the resources of a global company. ***Various positions are available in St. Louis, MO, Boston, MA and Mystic, CT.***

Bioinformatics Scientist

The Bioinformatics team supports the development and implementation of high-speed, high-throughput information and biology technologies, which comprise Monsanto's Genomics initiative. The successful candidate will become a member of the Applied Bioinformatics Team and will extract meaningful data from genomics information to identify significant leads for Monsanto's agricultural and pharmaceutical programs. Acting as one of the leads in the definition and enhancement of data-mining capabilities within a team, you will also participate in supporting the identification, development and implementation of new bioinformatics tools. You will generate prototypes of bioinformatics-related computer programs to solve specific research problems and work with the technical teams to define specifications for production-level systems. Ph.D. in molecular biology, genetics or equivalent education and experience in biological sciences is essential. At least 2 years of bioinformatics experience with a strong background in biology and computational biology, especially in generating useful information from massive output of data generated by sequencing, fingerprinting, mapping, positional cloning and/or transcript profiling necessary. In-depth knowledge of a programming language, such as Smalltalk, C++ or PERL is required. Experience in a commercial environment and a record of publishing is ideal. **Ad Code: 99-0315**

Data Curator

Required for curation of high-throughput sequences or transcriptional profiling and derived datasets, the successful candidate will work with bioinformatics scientists to ensure high quality data annotation and timely data processing. You will participate in the development and refinement or process SOPs and process metrics, as well as aiding in the improvement of algorithms employed in data processing, and in the identification and effective integration of improved bioinformatics methodologies. BS/MS in molecular biology and BS in computer science, or equivalent experience required. 1-2 years experience with UNIX, RDBMS (Oracle preferred), PERL and/or JAVA, computational sequence analysis software (BLAST, smith-waterman, MSA, profile analysis, HMMs, phred, assembly tools and clustering) essential. Knowledge of public genomic databases a plus. **Ad Code: 99-3509**

Having recently announced a merger with Pharmacia and Upjohn, we are anticipating an exciting future. We offer a competitive compensation and rewards package and are committed to the personal development of outstanding scientists. Please submit your resume to: **biotech.jobs@monsanto.com** or mail to: **Monsanto (insert ad code from above), 800 Lindbergh Blvd., Mail Code: E3SJ - TH, St. Louis, MO 63167.** EEO/AA Employer M/F/D/V. Please visit our website at www.monsanto.com

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IOWA STATE UNIVERSITY

Where you can become your best.

Director, Plant Sciences Institute

Iowa State University, one of the nation's leading land-grant universities, is seeking exceptional candidates for the position of director of its new multimillion dollar comprehensive Plant Sciences Institute. The institute initially consists of eight established interdisciplinary research centers spanning several colleges: (1) Center for Bioinformatics and Biological Statistics; (2) Center for Plant Breeding; (3) Center for Plant Genomics; (4) Center for Designer Crops; (5) Center for Plant Transformation and Gene Expression; (6) Center for Plant Responses to Environmental Stresses; (7) Seed Science Center; (8) Center for Crops Utilization Research. Visit the institute's Web site: www.plantsciences.iastate.edu

The director, who will report to the university provost, will lead and coordinate the operation and growth of the centers and the institute, and will promote collaboration between the institute, industry, other universities, and the State of Iowa. The director will also hold a tenured faculty position as a professor in an academic department related to the plant sciences, and will be expected to conduct research in an area of the plant sciences.

Iowa State is located in Ames, Iowa, a city of 50,000 recognized nationally for its exceptional quality of life. Iowa State is a Carnegie Foundation Research I university and AAU member. The university's 26,000-student population includes over 4,000 graduate students, with a faculty and staff of 6,000. Annual research expenditures approach $200 million. Over 60 centers and institutes conduct research in specialized areas. For more information about Iowa State, visit our Web site: www.iastate.edu

Candidates are required to have a Ph.D. and an outstanding ongoing record of national stature in research and scholarship in plant science or a related area, strong communication skills, and the ability to work productively with diverse constituencies. Candidates with experience in leadership of a research organization are preferred. Salary will be competitive and commensurate with experience and qualifications.

Nominations, expressions of interest, and letters of application, accompanied by a curriculum vita, should be sent to Dr. R. C. Seagrave, Search Committee Chair, Iowa State University, 107 Beardshear Hall, Ames, IA 50011-2230 (seagrave@iastate.edu; 515-294-0518; fax 515-294-8844). Review of applications will begin on March 1, 2000, and will continue until the position is filled.

Iowa State University is an equal opportunity/affirmative action employer and encourages nominations of, and applications from, women and minority candidates.

St. Jude Children's Research Hospital

ALSAC • Danny Thomas, Founder

POSTDOCTORAL RESEARCH ASSOCIATE

A newly-funded position is available to examine the developmental regulation of hematopoiesis. Current projects include the molecular characterization of two novel families of transcription factors utilizing gene disruption, transgenesis and protein biochemical approaches. The position is ideal for a Ph.D. or M.D. with laboratory experience, who would like to pursue training in developmental biology.

Qualified applicants should submit their curriculum vitae, and names of three references to:

John Cunningham, M.D.
Division of Experimental Hematology
St. Jude Children's Research Hospital
332 N. Lauderdale Street
Memphis, TN 38105
eo/aae

SUNNYBROOK & WOMEN'S COLLEGE HEALTH SCIENCES CENTRE TRAUMA RESEARCH PROGRAM

Fully Affiliated with the University of Toronto - Toronto, Canada

Sunnybrook & Women's College Health Sciences Centre is the amalgamation of three of Canada's finest health care organizations, Sunnybrook Health Science Centre, Women's College Hospital and the Orthopaedic and Arthritic Hospital. The new organization is an academic centre of excellence, fully affiliated with the University of Toronto, which provides patients with a full range of high-quality, values-based, patient-centred services, and is a leader in women's health.

SCIENTIST (Sunnybrook Site)

The Trauma Research Program at Sunnybrook & Women's College Health Sciences Centre is seeking a full-time scientist with interests in molecular neurobiology/neuroprotection/neuroanaesthesia. Present members have interests in circulatory physiology, matrix biology and neuronal injury, regeneration and repair. The research complements a Clinical Program which represents the largest Trauma Unit in Canada. The University of Toronto has a large neurosciences research program with many opportunities for collaborative interactions.

The candidate will hold a Ph.D. and preference will be given to those sufficiently advanced in their research career to have published widely and successfully competed for peer-reviewed research funding. However, consideration will be given to promising young investigators completing suitable post-doctoral training. It is expected that the candidate will seek cross-appointment to one of the Graduate Departments at the University of Toronto with the potential to supervise research trainees at all levels.

In accordance with Canadian Employment and Immigration Guidelines, preference will be given to Canadian citizens and permanent residents of Canada. In accordance with the University of Toronto's Employment Equity Policies and the Sunnybrook Site's Diversity Initiative, applications from all qualified candidates will be accepted.

Interested applicants should submit a complete curriculum vitae, as well as letters from three referees, by MARCH 31, 2000 to:

SUNNYBROOK & WOMEN'S

DR. M. G. JOHNSTON, Director, Trauma Research Program
Sunnybrook & Women's College Health Sciences Centre
Sunnybrook Site, Room S111 Research Building
2075 Bayview Avenue, Toronto, ON CANADA M4N 3M5
E-mail: tas.baksh@swchsc.on.ca

YSU
Youngstown State University

Youngstown State University Biological Sciences

The Department of Biological Sciences, Youngstown State University, seeks applicants for two tenure-track Assistant Professor positions beginning August 21, 2000. Successful candidates must possess a strong commitment to teaching, develop a vigorous research program involving undergraduate and graduate students, and pursue extramural research funding.

Microbiology. Ph.D. in Microbiology or related area with post-doctoral experience preferred. Research interest in medical Microbiology, prokaryotic cell biology or genetics preferred. Teaching responsibilities include microbiology courses for graduate and undergraduate students.

Physiology, Neuroscience. Ph.D. in Physiology or Neuroscience required with post-doctoral experience preferred. Primary responsibilities include undergraduate human anatomy and physiology courses for non-majors, and graduate course in pharmacology. Experience with comparative physiology desired.

Applicants required to hold terminal degree in their discipline no later than August 15, 2000. Review of applications will begin February 15, 2000, and continue until positions are filled. Interested individuals should submit a letter of application, vita, transcripts, and names, addresses, and telephone numbers of at least three references to **Dr. Paul C. Peterson, Chairperson, Department of Biological Sciences, Youngstown State University, One University Plaza, Youngstown, OH 44555.** e-mail: pcpeters@cc.ysu.edu

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Bayer Nucleic Acid Diagnostics: Expanding the Possibilities

Bayer Diagnostics seeks talented professionals eager to be challenged in an expanding entrepreneurial environment offering career opportunities and the resources of an established, worldwide company. We currently have the following openings available at our headquarters located on the eastern shores of the San Francisco Bay.

DIRECTOR OF RESEARCH

Oncology New Markers

You will direct a program to discover and develop new diagnostic markers in oncology. This is a multifaceted program to discover new markers and to define tests, methods, and systems for the early detection of cancer. Responsibilities include management of 10-12 R&D staff members, including PhDs and technologists, to develop assay systems and management of the business relationships associated with scientific collaborative partnerships. This position requires a PhD or MD or related degree, with 10+ years R&D experience in cell imaging, immunology and nucleic acids, and a working knowledge of oncology diagnostics and genomics. A strong research publication history is required.

Conveniently located in the East Bay and overlooking beautiful San Francisco, we offer a dynamic working environment as well as an excellent compensation and benefits program. To apply, please fax resumes to (510) 923-8464; mail to Bayer Nucleic Acid Diagnostics, NAD-W 849, 4560 Horton Street, Emeryville, CA 94608; or email to mary.letterii.b@bayer.com.

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Bayer (BAYER)

Business Group Diagnostics

Innovation works at Biogen. The creativity and ambition of our workplace sparks our teams to take responsibility, move on intelligent risks, and drive innovative decisions that are changing not only the science of medicine, but the lives of people with serious diseases. If you're ignited by taking initiative, you'll meet your match at Biogen.

www.biogen.com

BIOGEN

DELIVERING ON THE PROMISE OF BIOTECHNOLOGY.

SENIOR SCIENTIST, VIROLOGY

Working in a dynamic, matrixed environment, you will manage viral clearance laboratories and strategically oversee GLP assay development and viral clearance design. Requires a PhD in Biology, associated life science, or other relevant discipline, with a foundation in cellular and molecular virology, 7 years related industry or academic experience, and proven ability to develop quantitative cellular and molecular assays for virus detection. Experience in a regulated environment with knowledge in GLP/cGMP is essential. Protein purification experience a plus. Source Code: JT-JS

SCIENTIST-IMMUNOLOGY

We seek an innovative scientist with a strong background in inflammation and immunology to investigate activity and dissect the mechanism of action for novel therapeutic proteins. Knowledge in one or more of the following areas is preferred: costimulatory pathways, regulation of humoral immunity, Fc receptors, and B cell oncology. Strong skills in both cellular immunology and molecular biology is required, along with the ability to apply molecular expertise to dissect the function of biological pathways. Use of *in vitro* mammalian culture systems and rodent model systems also is essential. The successful candidate will have a PhD and at least 3-5 years of postdoctoral experience. Source Code: RC-LB

SCIENTIST I/II

We seek a team-oriented scientist with solid project management skills to develop and validate immunoassays to support clinical and pre-clinical drug trials, product development and product release. This includes generation, characterization and labeling of reagents for assay development, optimization and validation. Requires a PhD and 5 years of relevant experience with a strong background in immunology. Commercial drug development and characterization are desirable. Source Code: JT-RI

MICROBIOLOGY LAB SUPERVISOR

Responsibilites include supervising lab associates, troubleshooting technical issues, scheduling lab testing, training, and performing routine testing. Requires a BS, preferably in Microbiology, and 8+ years experience in a biotech/pharmaceutical microbiology laboratory. Strong knowledge of pharmaceutical microbiology, cGMPs, the CFR, the USP and EP is essential. Solid computer skills (MS, Excel and Word) and the ability to independently solve problems affecting the lab as well as work in a matrixed environment are musts. Source Code: JT-CM

Foster your initiative and creativity at Biogen. We have one of the strongest financial profiles in the industry and our compensation and benefits package, including equity participation, is unmatched. For consideration, please forward your resume to: Biogen, Inc., Attn: Human Resources, Source Code: _____, 14 Cambridge Center, Cambridge, MA 02142; Fax: (617) 679-2546; Email: resumes@biogen.com (Source Code ONLY must appear in the email subject line). Biogen is an Equal Opportunity Employer. No phone calls, please.

MARINE BIOLOGICAL LABORATORY
BIOLOGY OF AGING

AUGUST 1-18, 2000

A three-week lecture and laboratory course featuring the newest and most exciting ideas in aging research, with emphasis on molecular approaches. A distinguished faculty will interact with approximately 20 students via lecture, discussion, hands-on experiments and analysis of data. Lecture topics encompass model systems; mitochondrial defects and oxidative stress, DNA mutations and repair; telomeres and cellular senescence; mammalian aging; and evolutionary considerations. Laboratory exercises will examine aging in the models systems of *S.cerevisiae* and *C.elegans*; DNA changes in old versus young animals including mitochondrial, ribosomal, and other DNA species; mammalian aging in old versus young mice and in various mutant strains; and the molecular basis of Werner's syndrome.

Directors: Leonard Guarente, Massachusetts Institute of Technology; and Douglas Wallace, Emory University.

Application Deadline: April 11, 2000

VISIT COURSES.MBL.EDU FOR MORE INFORMATION!

CONTACT INFORMATION
Carol Hamel, Admissions Coordinator
Marine Biological Laboratory
7 MBL Street / Woods Hole, MA 02543
508-289-7401 / admissions@mbl.edu

The MBL is an EEO/Affirmative Action Institution

Postdoctoral Training In GENE THERAPY

The University of Alabama at Birmingham

The Gene Therapy Center of The University of Alabama at Birmingham invites applications for its NCI-supported training program in Gene Therapy for Cancer. Areas of study include: mechanisms of viral gene transfer; gene delivery; targeting, amplification, and novel vector systems; molecular ablation of oncogene expression; and targeted immunotherapy.

Participating Faculty: **Ronald D. Alvarez, M.D., Thomas R. Broker, Ph.D., Donald J. Buchsbaum, Ph.D., Louise T. Chow, Ph.D., David T. Curiel, M.D., Robert I. Garver, M.D., Beatrice H. Hahn, M.D., Albert F. LoBuglio, M.D., Donald M. Miller, M.D., Ph.D., Casey D. Morrow, Ph.D., John D. Mountz, M.D., Ph.D., Theresa V. Strong, Ph.D., De-chu Tang, Ph.D., and Richard J. Whitley, M.D.**

Candidates must be U.S. citizens or permanent residents. Please send a brief cover letter, curriculum vitae, and a list of references to:

David T. Curiel, M.D. and
Theresa V. Strong, Ph.D.
WTI 620
1824 6th Avenue South
Birmingham, AL 35294-3300
E-mail: theresa.strong@ccc.uab.edu

The University of Alabama at Birmingham is an Affirmative Action/Equal Opportunity Employer

GTC Gene Therapy Center at UAB

MECHANISMS OF CELL DEATH

THE INTERNATIONAL CELL DEATH SOCIETY

El Escorial Monastery, Madrid, Spain
May 6-9, 2000
Organizers: Zahra Zakeri, Richard A. Lockshin, Carlos Martinez-A.
Sessions: Cell Death in Development and Aging; Extracellular Signaling; Intracellular Signaling; Cell Death in Disease; Cell Survival; Proteolysis and other Degradative Mechanisms; Phagocytosis.

See further information at:
http://www.celldeath-apoptosis.org
USA Tel 718: 997-3450, Fax: 718: 997-3429 Zahra_Zakeri@qc.edu
Limited to 350 attendees
Abstract Deadline March 1.

Postdoctoral Fellowships in the Radiation Sciences

Department of Environmental and Occupational Health
Graduate School of Public Health
University of Pittsburgh

The goal of the program is to replenish the national pool of doctoral-level, multidisciplinary radiation professionals in governmental, academic and industrial positions. **The** two-year program includes any needed course work; in-house laboratory rotations; colloquia and seminars; a radiation epidemiology workshop and up to a year of field experience at domestic or foreign sites of interest to the Department of Energy. Qualified physicians may integrate DOE Fellowship training with the department's Occupational Medicine Residency program.

Areas of concentration include:
- radiation epidemiology and biostatistics
- health physics and radiobiology
- biological dosimetry, biomarker development and application
- occupational medicine

Applicants should have a recent doctoral degree in science, medicine, or law (Ph.D., D.Sc., Dr.P.H., M.D., D.O., J.D.) and US citizenship or permanent residency. Stipend: $33,500 first year, $36,000 second year. Health insurance and travel allowances to the field site are provided.

For more information, contact: **Dr. H. Gregg Claycamp, Program Director, University of Pittsburgh, 260 Kappa Drive, Pittsburgh, PA 15238**; Telephone: 412-967-6514; fax: 412-624-1020 Email: hgc2+@pitt.edu

NIMH NATIONAL TRAINING PROGRAM IN COMPLEX SYSTEMS & BRAIN SCIENCES AT FLORIDA ATLANTIC UNIVERSITY PREDOCTORAL FELLOWSHIPS

Predoctoral fellowships are available, funded by NIMH Division of Basic Brain and Behavioral Sciences. Individuals with undergraduate degrees in pertinent disciplines are invited to apply for this 5-year training program leading to the Ph.D. degree in Complex Systems and Brain Sciences. The Program is administered through the Center for Complex Systems and Brain Sciences established in 1985. The aim of the Program is to couple theoretical concepts and methods for handling complex systems to specific experimental research in the cognitive and brain sciences.

Graduate training consists of a core curriculum in nonlinear dynamics and neuroscience, including computational modeling and cognitive science. Research areas include sensor-motor coordination and learning human brain imaging and event-related potentials, brainstem mechanisms of behavior, actual growth and development, ion channel dynamics, speech production and perception, neurolinguistics, visual perception, music perception, mathematics of complex systems, nonlinear dynamics, neural networks, and robotics.

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

You can be part of our Vision for the Future!

As the world's leading research-based biotech supply company, our goal is to become the premier supplier of innovative products and systems which enable biotechnology and pharmaceutical companies to discover, develop and deliver tomorrow's health-care enhancing products. Our Research Areas include Molecular Biology, Applied Genomincs, Nucleotide and Dye Chemistry, Cell Biology and Enzymology. Our Product Development includes innovations in High-throughput DNA Sequencing, Genotyping, and drug screening, fluorescent-labled nucleic acids, novel thermostable enzymes, and protein and nucleic acid purification methods. If you share our enthusiasm for discovery and improving the quality of life, we can offer a rewarding future of challenge, opportunity and excitement.

Our continued growth has created an array of opportunities encompassing multiple career levels.
We are currently seeking candidates for the following areas:

R&D SCIENTISTS & RESEARCH ASSOCIATES

- DNA SEQUENCING & GENOMICS REAGENTS
- NUCLEIC ACID CHEMISTRY
- MOLECULAR BIOLOGY
- PROTEIN EXPRESSION & PURIFICATION
- NUCLEIC ACID SAMPLE HANDLING
- REAGENT STABILIZATION

These positions are located in Piscataway, NJ and offer a very competitive total compensation and benefits package which includes medical, dental, pension & 401(k) plans plus tuition and health club reimbursement.

For consideration, forward your resume indicating salary history/ requirements to:

Human Resources, Job Code: 99, Amersham Pharmacia Biotech,
800 Centennial Ave., Piscataway, NJ 08855
FAX: 732-457-8165. E-mail: recruit@am.apbiotech.com
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The Salk Institute

Postdoctoral Position

ADENO-ASSOCIATED VIRUS (AAV)
VIROLOGY AND GENE THERAPY VECTORS

A postdoctoral position is available to study virus replication and the use of viruses for gene delivery. Using adeno-associated virus (AAV) as a model we are investigating interactions between viruses and their host cells and mechanisms of viral integration. AAV is also attractive as a gene therapy vector and we are exploring combinations of viral elements in novel vectors for gene delivery. The successful applicant will join a highly interactive team that uses molecular biology, biochemistry and cell biology to study virus infections. The successful candidate should have a strong background in virology, viral vector systems and molecular biology.

Send Curriculum Vitae, a statement of research interests, and the names and addresses of three references to:

Matthew D. Weitzman, Ph.D.
Assistant Professor, Lab of Genetics
The Salk Institute
10010 N. Torrey Pines Road,
La Jolla, CA 92037, USA
Email: mweitzman@aim.salk.edu

The Salk Institute is an
Equal Opportunity Employer
www.salk.edu

Expanding the Powers of Research

St. Jude Children's Research Hospital is an Internationally renowned research and treatment center for children with catastrophic diseases – primarily pediatric cancers. The scientists at St. Jude are committed to biomedical research that seeks to understand the molecular causes of disease, improving diagnosis and treatment, minimizing immediate and long-term side effects, and ultimately – to finding a cure for those diseases. We have recently embraced a 5- year, $1 billion dollar expansion project to support our continuing research. This expansion brings new and exciting career opportunities for motivated professionals in the following areas:

- **Research Technologists**
- **Senior Research Technologists**
- **Research Lab Specialists**

St. Jude is located in Memphis, Tennessee, a city rich in history and culture stretching from the banks of the mighty Mississippi to the rolling green hills of eastern Shelby county. To learn more about St. Jude, the positions we have available and our home in Memphis, please visit our web site. For immediate consideration, e-mail, fax or mail your resume to:

St. Jude Children's Research Hospital
Human Resources Department
332 North Lauderdale
Memphis, TN 38105
E-mail: virgil.holder@stjude.org
Fax: 901-495-3123

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

www.stjude.org/hr

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Photo courtesy of St. Jude Biomedical Communications Department.

HUMAN TUMOR IMMUNOLOGIST FACULTY POSITION DEPARTMENT OF MICROBIOLOGY DARTMOUTH MEDICAL SCHOOL

The Department of Microbiology at Dartmouth Medical School (DMS) invites applications for a human tumor immumologist to fill a tenure track faculty position to expand the Immunology Program at Dartmouth and the Immunology and Cancer Immunotherapy Program of the Norris Cotton Cancer Center, an NCI-funded and comprehensive center. The successful applicant will hold the MD and/or Ph.D. degree, and will join a faculty that has strong research and teaching credentials in a range of topics within the field of immunology, specifically at the interface of the immune response and oncology. Although targeted primarily at the Assistant/Associate Professor level, senior candidates with particularly strong records of research accomplishment and sustained program growth and funding are welcome to apply. Candidates will be expected to develop or expand upon a strong, independent yet collaborative, research program addressing the immune response to human tumors or neoplasms. While investigators studying any immunological aspect or immunotherapeutic approach to human cancer are encouraged to apply, there is some preference for a research focus on T cell-mediated anti-tumor immunity. Teaching expectations include participation in courses in medical microbiology/immunology, undergraduate immunology, and a graduate course in the Molecular and Cellular Biology (MCB) Ph.D. Program.

This position affords the opportunity to utilize the state-of-the-art facilities and resources associated with a major research and teaching institution and cancer center, while enjoying the quality of life characteristic of the area of New England surrounding the Dartmouth community. For further information on the various programs at DMS and the NCCC, see the listings at www.dartmouth.edu/~dms/ and NCCC.hitchcock.org.

Applications should consist of a curriculum vitae, a brief statement of research interests and plans, and three letters of reference to: **Dr. William R. Green, Director of the Immunology Program, Department of Microbiology, Dartmouth Medical School, 600 W. Borwell Building, 1 Medical Center Drive, Lebanon, NH 03756**. Applications will be reviewed beginning Feb. 1, 2000 and continue until the position is filled. *Dartmouth Medical School is an Affirmative Action/Equal Opportunity Employer and encourages applications from women and members of minority groups.*

MAKING A WORLD OF DIFFERENCE IN BIOTECHNOLOGY!

As a global leader in the biotechnology arena, Genencor International develops and markets innovative enzymes that are highly efficient and cost-effective. Currently, we are seeking the following individuals to contribute to our exciting research efforts at our state-of-the-art R&D facility in Palo Alto.

RESEARCH ASSOCIATE

As a Research Associate, you will perform routine sequence analysis to mine public and proprietary databases, install and maintain sequence analysis tools, support and maintain our sophisticated in-house organism database, and assume Web development responsibilities (CGI programming). In addition, you will help formulate database application software (database update, query and presentation). Your qualifications must include a BS/MS in Computer Science or a related field, or a BS/MS in Biological Sciences with extensive professional programming experience, including working knowledge of UNIX, PERL, C++ and relational databases. Knowledge of biology is highly desired.

We offer a competitive compensation and benefits package, including 3 weeks of paid vacation, a generous 401(k) matching plan and a retirement plan. For consideration, please submit your resume/c.v., indicating Job Code PA44R99, to: Genencor International, Inc., 925 Page Mill Road, Palo Alto, CA 94304-1013, Fax: (650) 845-6503, email: hr@genencor.com. Background checks will be conducted. An equal opportunity employer M/F/D/V.

www.genencor.com

Genencor International, Inc.® Innovative by Nature™

Biotechnology

The Genomics Institute of the Novartis Research Foundation (GNF), located in La Jolla, CA, is developing and applying novel technologies for genomewide functional characterization.

POSTDOCTORAL ASSOCIATES

We seek three Postdoctoral candidates with interest in developing and applying a systematic experimental evaluation of structural and functional relationships in the study of key genes identified through genomics. Candidates with a strong background in either protein biochemistry, molecular biology or related fields, and a high level of motivation are desired. Successful candidates will have access to cutting-edge high throughput genomics, proteomics, and structural genomics technologies. Individuals with experience in any of these areas are encouraged to apply.

GNF offers an excellent compensation and benefits package, including a 401(k) plan. For immediate and confidential consideration, please send resume and salary history to: GNF, HR Dept - SNJ/PD-SCI, 3050 Science Park Road, Suite 102, San Diego, CA 92121-1102; Fax: (858) 784-8995. AA/EOE.

NOVARTIS

THE R. W. JOHNSON

PHARMACEUTICAL RESEARCH INSTITUTE - La Jolla

At PRI, our microbiology research group is focused on the discovery of antibacterial agents. If you are seeking an opportunity to be on the cutting edge of pharmaceutical drug discovery, this is your opportunity to become part of a new multi-disciplinary group utilizing genomics and microarray technology for the identification of novel targets.

MICROBIOLOGY OPPORTUNITIES

Scientist/Senior Scientist

In addition to a Ph.D. or D.V.M. degree with 2-8 years experience, the successful candidate will have a background in infectious diseases/pathogenesis or a related field, preferably working with gram-positive bacteria such as S. aureus or S. pneumoniae. Experience in animal models, high through-put screening, or array technology is a plus. **Ref # 8161**

Associate Scientists

Requirements include a Bachelor's degree or Master's degree and 0-6 years of related experience. A strong background in microbiology or in vivo animal models is required for one position. A background in molecular biology, biochemistry or microbial genetics is required for an additional position. Experience in assay development and high through-put screening is a plus. **Ref #8160**

Please send your resume **(Must include Ref #)** to:

Human Resources, RWJPRI
3210 Merryfield Row
San Diego, CA 92121
E-mail: prijhr@prius.jnj.com

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LABORATORY OF HUMAN BACTERIAL PATHOGENESIS

Employment Opportunities

The Laboratory of Human Bacterial Pathogenesis (LHBP) at the National Institute of Allergy and Infectious Diseases, National Institutes of Health is currently recruiting for three tenured/tenure track scientists. The laboratory is located at the Rocky Mountain Laboratories in the scenic Bitterroot Valley in Hamilton, Montana. The LHBP is an interdisciplinary group exploring fundamental molecular processes of host-pathogen interaction. Research in this new laboratory is primarily concerned with the molecular basis of pathogenesis of the following bacteria: Group A *Streptococcus*, *Mycobacterium tuberculosis*, *Borrelia* species, *Yersinia pestis*, and *Neisseria gonorrhoeae* (see http://www.niaid.nih.gov/dir/labs/lhbp.htm; http://www.niaid.nih.gov/dir/labs/lmsf.htm). Research opportunities are being significantly expanded in the area of group A *Streptococcus*, *Mycobacterium tuberculosis*, and *Staphylococcus aureus*. However, exceptional candidates working in other areas of human bacterial pathogenesis will also be considered and are encouraged to apply.

Individuals selected for a tenure track position are expected to build a dynamic and productive research group. Applicants for tenured positions must have an international reputation and well-documented evidence of ongoing independent accomplishments. Laboratory facilities, start-up and sustained research funds, and salary will be competitive with premier academic institutions. The facility is undergoing significant scientific expansion. Facilities are available for state-of-the-art genomic analysis; electron and confocal microscopy, and other imaging techniques; biosafety level-3 pathogen research; and a vivarium that includes non-human primate research capabilities. Other scientific interests of investigators at this facility include chlamydia (http://www.niaid.nih.gov/dir/labs/licp.htm) and persistent viral diseases (http://www.niaid.nih.gov/dir/labs/lpvd.htm).

2 Positions in the Pathogen Molecular Genetics Section

We seek tenured/tenure-track scientists whose research efforts focus on the molecular biology of host-pathogen interactions in Group A *Streptococcus*, *Mycobacterium tuberculosis*, or *Staphylococcus aureus*. Individuals using contemporary molecular genetic approaches to investigate host-pathogen interactions or identify novel mechanisms to control these pathogens are especially sought. Please direct programmatic inquiries to: **Dr. James M. Musser, Chief, LHBP by e-mail: jmusser@niaid.nih.gov**

Position in the Pathogen-Vector Molecular Interaction Section

We seek a scientist whose research complements ongoing work in the Laboratory of Human Bacterial Pathogenesis and focuses on the molecular basis of pathogen-vector or host-pathogen interaction, broadly defined, in *Borrelia* species or *Yersinia pestis*. However, exceptional candidates working on other important bacterial pathogens with an arthropod host will also be considered and are encouraged to apply. Please direct programmatic inquiries to: **Dr. James M. Musser, Chief, LHBP by e-mail: jmusser@niaid.nih.gov**

APPLICATION PROCESS: Applicants must be U.S. citizens, resident aliens, or nonresident aliens with or eligible to obtain a valid employment authorized visa. Salary depends on degree and qualifications. Salary up to $157,000 per annum. Other incentives may be available. A curriculum vitae, bibliography, three letters of reference, a detailed statement of research interests and selected publications must be submitted by March 3, 2000 to:

Ms. Kim Tran
Office of Human Resources Management, NIAID
Building 31, Room 7A27
31 Center Drive, MSC 2520
Bethesda, Maryland, 20892-2520.

Applicants interested in applying for more than one discipline must submit a complete package for each and cite the vacancy announcement number and scientific opportunity. The vacancy announcement numbers are: AI-99-201 for Pathogen Molecular Genetics, and AI-99-203 for Pathogen-Vector Molecular Interaction. All information provided by applicants will remain confidential and will only be viewed by authorized officials of the NIAID.

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FACULTY POSITIONS IN BIOMEDICAL ENGINEERING COLLEGE OF ENGINEERING
University of California, Davis

The College of Engineering at University of California, Davis, invites applications from qualified candidates for a faculty position in the area of biomedical engineering. Senior candidates should have an outstanding international research reputation in biomedical engineering and a track record of interdisciplinary collaboration. Junior candidates should have outstanding research potential. A Ph.D. degree in biomedical engineering or a related discipline is required. Particular areas of interest include biological and medical imaging, biomedical microsystems, and cell mechanics. The College of Engineering has formed a new Division of Biomedical Engineering that is expected to expand significantly over the next few years. The Davis campus is the third largest in the University of California system. University of California, Davis, ranks among the nation's top 20 universities in research funding and has been rated as one of the top five "up-and-coming" universities in the country. Applicants must be able to teach core undergraduate and graduate courses and be willing to help establish an innovative, multidisciplinary curriculum in the field of biomedical engineering.

Davis ia a pleasant, family-oriented community in a college town setting, with excellent public schools and a mild climate. Davis is ideally located for many recreational, cultural, and professional activities. It is just 15 miles from California's capital city of Sacramento and is within easy driving distance of the Sierra Nevada Mountains, Berkeley, San Francisco, Silicon Valley, wine country, and the Pacific Coastal areas.

Interested individuals should forward their résumé, a summary of teaching and research plans, and the names of at least three professional references to:

Professor Katherine W. Ferrara
Chair, Division of Biomedical Engineering
University of California
One Shields Avenue
Davis, CA 95616-5294

To ensure consideration, applications should be submitted by February 29, 2000. The positions will remain open until filled. **Website: http://www.engr.ucdavis.edu**. *The University of California, Davis, College of Engineering is committed to building a diverse faculty, staff, and student body as it responds to the changing population and educational needs of California and the nation. The Univesity of California is an Affirmative Action/Equal Opportunity Employer.*

The United States Department of Agriculture (USDA), Agricultural Research Service (ARS), Plant Sciences Institute, Fruit Laboratory, in Beltsville, Maryland, is seeking applications for a **SUPERVISORY PLANT PHYSIOLOGIST/PLANT PATHOLOGIST/HORTICULTURIST/SOIL SCIENTIST**, GS-435/434/437/470-14/15. Salary is commensurate with experience (GS-14: $71,954 to $93,537; GS-15: $84,638 to $110,028 per annum) plus benefits. *Candidates must be U.S. citizens.* The position serves as Research Leader of the Laboratory, whose mission is to develop basic and applied information on small-fruit physiology, biochemistry, pathology, culture, molecular biology, genetics, and breeding; characterization of and development of diagnostic procedures for exotic diseases of citrus; and processing of restricted plant germplasm through legally required pathogen testing protocols while in quarantine. The incumbent coordinates the research programs of the Laboratory and provides for integration and sharing of scientific expertise.

Candidates must request a copy of the vacancy announcement (ARS-X0E-0107) by either calling **Telephone: 301-504-1484** or by copying the full-text announcement from the ARS home page at **website: www.ars.usda.gov**. Candidates must submit specific information outlined in the vacancy announcement. Applications must be postmarked by the closing of February 7, 2000. *USDA/ARS is an Equal Opportunity Provider and Employer.*

POSITIONS OPEN

FACULTY POSITION IN MOLECULAR PARASITOLOGY

The Institute of Parasitology of McGill University invites applications for one position at the level of **ASSISTANT PROFESSOR** (tenure track) from individuals who apply molecular approaches to the study of parasitic protozoa or helminths. The Institute of Parasitology offers M.Sc. and Ph.D. degrees and a graduate certificate in biotechnology and has strong, internationally recognized research programs in biochemistry, immunology, molecular biology, and ecology of parasites, which are conducted in our modern research complex. We are expanding our strength in molecular biology of parasites transmitted by vectors. Hence, candidates with experience in molecular approaches to infections such as malaria, trypanosomiasis, leishmaniasis, filariasis, or onchocerciasis are particularly encouraged to apply. The successful applicant will be expected to develop a strong, internationally competitive research program involving graduate students and Postdoctoral Fellows to participate in collaborative research within and outside the Institute of Parasitology and to participate in teaching at both the graduate and undergraduate level. Applications should include a full curriculum vitae, including a complete list of publications, a statement of research interests, and the names of three individuals who have agreed to provide letters of reference. Address applications to: **Director, Institute of Parasitology, McGill University (Macdonald Campus), 21111 Lakeshore Road, Ste-Anne de Bellevue, Quebec H9X 3V9 Canada**. Effective date of appointment will be July 1, 2000. The deadline for applications is March 24, 2000. For further information on the Institute of Parasitology and the requirements for the position, see **website: http://parasitology.mcgill.ca** or contact: **Dr. Marilyn Scott, Director. E-mail: marilyn@parasit.lan.mcgill.ca; Telephone: 514-398-7722; FAX: 514-398-7857**.

In accordance with Canadian immigration requirements, this advertisement is directed in the first instance to Canadian citizens and permanent residents of Canada. McGill University is committed to equity in employment.

TENURE-TRACK FACULTY POSITION DEPARTMENT OF PHYSIOLOGY QUEEN'S UNIVERSITY

The Department of Physiology (**website: http://meds.queensu.ca/medicine/physiol/**) invites applications for a tenure-track position in physiology at a level (**ASSISTANT** to **FULL PROFESSOR**) appropriate to the candidate's experience. Candidates should have expertise in cardiopulmonary physiology or neuroscience. Requirements include a Ph.D. or M.D. degree, outstanding scholarship, a strong record of achievement, and the potential to attract external funding. Applicants at the Associate level will be expected to hold national research funding and display strong potential to obtain career awards at the national or provincial level. The Department's current research strengths lie primarily in neuroscience and cardiopulmonary physiology, and candidates should preferably complement these strengths. Queen's University is recognized nationally for the quality of its undergraduate and graduate programs, which attract outstanding students. Kingston is a vibrant community of approximately 150,000, which is situated on the shores of Lake Ontario at the mouth of the St. Lawrence River. The University and the region offer an outstanding academic and community environment (**website: http://www.queensu.ca**). The deadline for application is April 15, 2000. Applicants should forward a copy of the curriculum vitae and names of three references to: **Dr. A. V. Ferguson, Professor and Head, Department of Physiology, Queen's University, Kingston, Ontario K7L 3N6 Canada**. *In accordance with Canadian immigration requirements, this advertisement is directed towards Canadian citizens and permanent residents. Queen's University has an employment equity program and encourages applications from all qualified candidates including women, aboriginal people, people with disabilities, visible minorities, gay men, and lesbians.*

POSITIONS OPEN

CHAIR, DEPARTMENT OF BIOCHEMISTRY AND MOLECULAR BIOLOGY
University of North Dakota

The University of North Dakota School of Medicine and Health Sciences invites applications and nominations for the position of **CHAIR** of the Department of Biochemistry and Molecular Biology. We seek an outstanding medical scientist with a strong research record in an area of biochemistry and molecular biology who has a proven ability to obtain extramural support. The successful candidate will complement, expand, and strengthen existing areas of research in the department and will be expected to participate in medical, graduate, and allied health education; therefore, he/she must be committed to excellence in teaching. The applicant should also possess interpersonal and leadership skills in mentoring faculty, directing students, and performing administrative duties.

The Chair will oversee a department whose active research interests include enzyme regulation, protein-protein interactions, cyclic nucleotide interactions, drug resistance, transporter proteins, mitochondrial enzymes, effects of oxidative stress, protein phosphorylation, and gene regulation. The department offers M.S., Ph.D., and M.D./Ph.D. degrees and is involved in the education of medical students. Further information is available at: **website: http://www.med.und.nodak.edu/depts/biochem/home.htm**.

Review of applications will begin immediately, and the search will remain open until the position is filled. The position will be available July 1, 2000. Applicants should submit a detailed curriculum vitae; a statement that addresses administrative philosophy, research goals and teaching interests; and the names and addresses of three references to:

Dr. Roger Melvold
Professor and Chair of the Department of Microbiology and Immunology
Chair of the Search Committee
c/o Office of the Dean
School of Medicine and Health Sciences
University of North Dakota
Box 9037
Grand Forks, ND 58202-9037

The University of North Dakota is an Equal Opportunity/Affirmative Action Institution.

FACULTY POSITIONS IN MOLECULAR CARDIOLOGY

The Molecular Cardiology Program of the Cardiology Division, Department of Medicine, Weill Medical College of Cornell University, is seeking three outstanding, full-time, basic research-oriented faculty members for appointments in the tenure track at the **ASSISTANT** or **ASSOCIATE PROFESSOR OF MEDICINE** levels. Candidates must have M.D., Ph.D., or M.D./Ph.D degree(s) and a track record of investigative excellence in areas related to cardiovascular biology. The successful candidate will receive attractive start-up packages and will join a multidisciplinary team devoted to human genetics, cardiovascular development, vascular biology, genomes, electrophysiology, and gene therapy. Applicants should have substantial expertise in areas such as (but not limited to): (1) signal transduction, (2) mouse genetics, (3) cellular electrophysiology, (4) integrated physiology, (5) cardiomyocyte growth and differentiation, and (6) excitation-contraction coupling.

Salaries will be commensurate with experience. Applicants should send a statement of research interest/accomplishments, curriculum vitae, and names of three references to:

Bruce B. Lerman, M.D.
Chief, Cardiology Division
Department of Medicine
Weill Medical College of Cornell University
525 East 68th Street
New York, NY 10021

Weill Medical College of Cornell University is an Equal Opportunity Employer.

Dendreon Corporation is a private biotechnology company that develops and commercializes novel products for the treatment of cancer, infectious diseases and autoimmunity through its innovative manipulation of the immune system. Dendreon has discovered, and is in the process of developing, novel therapeutic vaccines and antibodies for the treatment of cancer using proprietary antigen discovery, antigen engineering and dendritic cell technologies.

SENIOR SCIENTIST

You will plan, conduct, and supervise research in the field of discovery and engineering of target antigens for immunotherapy of cancer. Familiarity with a wide variety of current molecular cloning techniques is needed for this position along with a strong scientific track record in gene discovery, cloning and characterization. A Ph.D. in Molecular Biology or related discipline with at least 6 years of postdoctoral experience is required. Previous supervisory experience is also necessary.

We offer a competitive salary and benefits package which includes stock options. For consideration, please send your resume & cover letter to: Cheryl Fromm, Human Resources Manager, Dendreon Corporation, 3005 First Avenue, Seattle, WA 98121. Fax: 206-256-0571 or email to hr@dendreon.com.

DENDREON CORPORATION
www.dendreon.com

Growing the Seeds of Technology

Just as a paradigm is an example followed by others, Paradigm Genetics is setting an entirely new standard in next-generation science. Every day, we're working to develop advanced technologies that add unprecedented speed and efficiency to the process of genetic analysis. In doing so, we're transforming the very nature of functional genomics...and creating challenge and opportunity unlike anything you've ever seen. Join us on the leading edge of agriculture and technology, where brilliant innovation—and brilliant possibilities—define the future you deserve.

This is what you should expect from a world-class employer; a dynamic team environment, excellent growth potential, generous compensation, superior benefits and stock options. And this is where you will find it. Please send resume referencing job code, and salary history to: **Paradigm Genetics, Attn: Human Resources, P.O. Box 14528, Research Triangle Park, NC 27709; FAX: (919) 544-6076; E-mail: hr@paragen.com** No phone calls please. Principals only. EOE

HTS Assay Development - Project Leader: (JOB # NOR/JAN/210P)

HTS Assay Development Scientists : (JOB #NOR/JAN/211P)

We are looking for several highly qualified candidates to join our Assay Design/Development Group. This group is responsible for all aspects of HTS design and development from gene cloning through validation and installation, but not screening. Technologies and formats include enzyme, receptor binding, reporter gene, phage display, and immunological. All candidates must possess industrial experience to be considered. Experience with various expression systems, purification techniques, enzyme kinetics, immunochemistry, and robotics is preferable. The project leader must have project management and supervisory experience as well as a thorough understanding of all aspects required for the design and delivery of HTS assays. Project leader position requires a PhD with 5+ years of industrial experience or MS/BS with additional industrial experience. Associates require MS/BS 5+ years of industrial experience. Application Deadline: February 7th, 2000.

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Agricultural Research Service
U.S. Department of Agriculture

Vacancy Announcement ARS-XOE-9253-R

NATIONAL PROGRAM LEADER FOR GENOMICS AND BIOINFORMATICS

Animals ♦ Plants ♦ Microorganisms

This senior-level position is located in the National Program Staff/ARS, which develops research policies and programs for USDA's chief in-house science agency. This position is responsible for developing and overseeing a major genome research program on agriculturally important plants, animals and microorganisms.

Application instructions at
www.ars.usda.gov/afm/hrd/vacancy/vac2.html
(See Ann. # ARS-XOE-9253-R)
or call 301-504-1484.

Announcement closes 3/10/2000

This position is located in ARS Headquarters in Beltsville, MD.

USDA/ARS is an equal opportunity employer and provider

NATIONAL INSTITUTES OF HEALTH
NATIONAL CANCER INSTITUTE
LABORATORY OF CELLULAR CARCINOGENESIS AND TUMOR PROMOTION

Two Postdoctoral Research Positions, available immediately
Starting Salary Range: $31,500, Commensurate with Experience
Candidates must have a Ph.D. and/or M.D. degree and less than 5 years postdoctoral experience.

The Laboratory of Cellular Carcinogenesis and Tumor Promotion, under the direction of Dr. Stuart H. Yuspa, conducts a comprehensive research program to determine the genetic, molecular and biological changes that occur during the process of multistage carcinogenesis.

1. A postdoctoral position is available for the study of CpG island hypermethylation during squamous tumor progression and its relationship to inactivation of TGFß1 signaling. The investigator will focus on mechanisms of hypermethylation of the mouse MGMT promoter in TGFß1+/+ and -/- keratinocytes, as well as identify other genes that undergo hypermethylation during tumor progression in the skin carcinogenesis model. Candidates should have a strong background in the molecular and cell biology of cancer. Please send c.v. and three letters of reference to **Dr. Adam Glick, National Cancer Institute, LCCTP, Building 37, Room 3B19, Convent Dr., Bethesda, MD 20892. E-mail: glicka@dc37a.nci.nih.gov**.

2. A postdoctoral position is available to identify, fine-map, clone and characterize genes that contribute to the development of benign and malignant skin tumors in mouse strains that differ in susceptibility. The investigator will conduct a genome scan and develop congenic mouse strains to identify susceptibility loci and candidate genes. In addition, the investigator will develop *in vitro* assays with keratinocytes to facilitate screening efforts. Candidates should have a strong background in murine genetics and molecular biology. Please send c.v. and three letters of reference to **Dr. Henry Hennings, National Cancer Institute, LCCTP, Building 37, Room 3B12, Convent Dr., Bethesda, MD 20892. E-mail: hh20v@nih.gov**.

NIH is an Equal Opportunity Employer.

FACULTY POSITIONS
SEALY CENTER FOR CANCER CELL BIOLOGY
University of Texas Medical Branch

The Sealy Center for Cancer Cell Biology, a newly created, privately endowed cancer research center, seeks candidates for tenure-track faculty positions at all levels in the molecular and cellular biology of cancer. Preference will be given to candidates interested in working in a highly collaborative, interdisciplinary environment and whose interests enhance those of current Center faculty. Current areas of interest include the role of protein kinase C isozymes in carcinogenesis, the role of cell cycle regulatory proteins in cancer, mechanisms of TGF-β/SMAD signaling, the development of transgenic mouse models of cancer, and the molecular mechanisms by which diet influences carcinogenesis. Successful candidates will be expected to establish and maintain independent, externally funded research programs. Candidates will be provided with generous start-up packages, competitive compensation and benefits, and modern laboratory space within the Center. Candidates will hold tenure-track appointments in a basic or clinical department within the School of Medicine. Applicants for **ASSISTANT PROFESSOR** positions should have at least two years of postdoctoral or equivalent experience and strong publication records. Candidates for **ASSOCIATE** or **FULL PROFESSOR** positions should have established, funded research programs and strong publication records. Please send a curriculum vitae, statement of research interests and goals, and the names of three references to: **Alan P. Fields, Ph.D., Director, Sealy Center for Cancer Cell Biology, University of Texas Medical Branch, MRB 9.104, 300 University Boulevard, Galveston, TX 77551-1048**.

University of Texas Medical Branch is an Equal Opportunity/Affirmative Action Employer; Minorities/Females/Disabled/Veterans. University of Texas Medical Branch is a smoke-free/drug-free workplace and hires only individuals authorized to work in the United States.

FACULTY POSITION

The Lerner Research Institute of the Cleveland Clinic Foundation invites applications for a new faculty position in the area of leukocyte:endothelial cell interactions. Research programs dealing with adhesion receptors, leukocyte trafficking, and cytokine involvement in the inflammatory response (at a basic molecular and cellular level) would be particularly appropriate. The appointment is likely to be at the **ASSISTANT STAFF** level, but exceptional candidates at an **ASSOCIATE** level will be considered. The LRI has more than 100 PIs, is located in new facilities, provides state-of-the-art core services to support research, and will offer a generous start-up package. Applicants should send a complete curriculum vitae, including copies of significant publications; a future research plan; and the names of three references to: **Edward F. Plow, Ph.D., The Cleveland Clinic Foundation, Department of Molecular Cardiology, 9500 Euclid Avenue/NB50, Cleveland, OH 44195**. *The Cleveland Clinic Foundation is an Equal Opportunity Employer.*

Three tenure-track **ASSISTANT PROFESSOR** positions: parasitology/invertebrate zoology, economic entomology, and plant taxonomy for August 2000. Ph.D. required. Teaching includes graduate and undergraduate courses. Scholarly research involving students expected. Detailed departmental information at **website: http://www.shsu.edu/~bio_www/**. Send résumé, statement of teaching philosophy and research interests, three letters of reference, and transcripts by March 1, 2000, to: **Dr. J. E. N. Hudson, Search Committee, Department of Biological Sciences, P.O. Box 2116, Sam Houston State University, Huntsville, TX 77341**. For additional information on these and other positions, access our **website: http://www.shsu.edu/~hrd_www/facultyemp.html**. *Sam Houston State University is an Equal Employment Opportunity/Affirmative Action Provider Employer.*

POSITIONS OPEN

MICROBIOLOGY/IMMUNOLOGY FACULTY POSITION
TEXAS A&M UNIVERSITY SYSTEM
Health Science Center
Baylor College of Dentistry

The Department of Biomedical Sciences at Baylor College of Dentistry is seeking an outstanding scientist in the broad area of microbiology/immunology with an interest in oral mucosal immunity and/or oral infection and stomatology for a tenure-track position at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level. Baylor College of Dentistry, a member of the Texas A&M University System Health Science Center, is located in Dallas, Texas, and has affiliations with the Baylor Institute for Immunology Research at Baylor University Medical Center. The successful applicant will also be a member of the A&M HSC Graduate School of Biomedical Sciences. Applicants should have a Ph.D. as well as evidence of independent research through publications in peer-reviewed journals and competitiveness for funding in one or more of the following areas: molecular pathogenesis, inflammation, virology, and bacterial genetics. Teaching responsibilities will include microbiology/immunology and cell/molecular biology to D.D.S., Ph.D., and postgraduate trainees. Please send curriculum vitae with a brief statement of research interests and names of three references to: **Dr. Kathy K. H. Svoboda, Microbiology Search Committee, Department of Biomedical Sciences, Baylor College of Dentistry, Texas A&M University System Health Science Center, 3302 Gaston Avenue, P.O. Box 660677, Dallas, TX 75266-0677. E-mail: ksvoboda@tambcd.edu; website: http://www.tambcd.edu/**. *Baylor College of Dentistry is an Equal Opportunity Employer committed to excellence through diversity.*

FACULTY POSITION
IN THE NEUROSCIENCES

The Department of Neurology of the University of California San Francisco is recruiting for the position of **ASSISTANT PROFESSOR**. The position will be based in well-equipped laboratory space in the Neurology Service at the San Francisco Veterans Affairs Medical Center. Only BE/BC neurologists judged capable of successful, independent, laboratory-based neuroscience research will be considered. We particularly encourage individuals with an interest in neuroregeneration, stem cell biology, or mechanisms of cell death to apply. The successful applicant will participate in our teaching and clinical programs. Send curriculum vitae, summary of research interest, and three letters of reference to: **Jorge Oksenberg, Ph.D., Search Committee Chair, Department of Neurology, UCSF, 513 Parnassus Avenue, Box 0435, San Francisco, CA 94143-0435**. *UCSF is an Affirmative Action Employer. UCSF undertakes Affirmative Action to assure Equal Employment Opportunity for underutilized minorities and women, for persons with disabilities, and for Vietnam-era and special disabled veterans.*

ASSISTANT/ASSOCIATE PROFESSOR
DEPARTMENT OF ENVIRONMENTAL MEDICINE
New York University School of Medicine

Applications are invited for a faculty position in the respiratory toxicology program. The successful candidate should have a background in molecular and/or biochemical toxicology and have an interest in studying the effects of environmental toxicants upon the respiratory tract. He or she will be expected to develop an independent research program via extramural funding. Applicants must have a Ph.D. or equivalent degree. Salary and rank at appointment is commensurate with previous experience. Applicants should submit a curriculum vitae, statement of research interests, and names of three references to: **Dr. Richard B. Schlesinger, Department of Environmental Medicine, New York University School of Medicine, 57 Old Forge Road, Tuxedo, NY 10987**. *New York University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

FACULTY POSITION IN BIOCHEMISTRY

Western University of Health Sciences College of Pharmacy invites applications for a tenure-track faculty position in biochemistry. Candidates should possess a Doctoral-level degree in biochemistry or a related discipline (e.g., molecular pharmacology or molecular biology). Western University is committed to excellence in teaching. The candidate should be open to innovative curricular approaches and teaching methods and be capable of teaching in the professional pharmacy program by integrating concepts of biochemistry and clinical chemistry into the expected curricular outcomes. Preference will be given to those individuals with postdoctoral experience and a pharmacy background. An interest or background in clinical chemistry/clinical biochemistry would be desirable. The successful candidate will be expected to establish an extramurally funded research program. Salary and rank are negotiable and commensurate with qualifications and experience. Applicants should submit a letter of interest describing teaching and research activities and goals, a curriculum vitae, and the names and contact information of three references. Review of application materials will continue until the position is filled. Complete applications (electronic submission encouraged) should be sent to:

Dion Brocks, Ph.D., Chair, Search Committee
Western University of Health Sciences
College of Pharmacy
College Plaza, 309 East Second Street
Pomona, CA 91766-1854
Telephone: 909-469-5597
FAX: 909-469-5539; e-mail: dbrocks@westernu.edu

Western University of Health Sciences is an Affirmative Action/Equal Opportunity Employer and actively seeks applications from women and minorities.

FACULTY POSITION
FOREST ECOSYSTEM RESTORATION

The Ohio State University, School of Natural Resources, invites applications for a tenure-track **ASSISTANT PROFESSOR** position. The successful candidate will develop an independent research program focusing on the ecological processes and integrity of forest ecosystems, including managing and restoring the natural structure and function of ecosystems within forested landscapes. Qualifications include a Ph.D. in an area appropriate to the study of forest ecosystems, such as community ecology, forest soils, biogeochemistry, or forestry. Applicants must send (1) a letter of interest; (2) curriculum vitae; (3) all transcripts; and (4) a list of five references, including complete addresses, telephone numbers, and e-mail addresses to: **Forest Ecosystem Restoration Search Committee, School of Natural Resources, The Ohio State University, 2021 Coffey Road, Columbus, OH 43210-1085**. More information available at **website: http://www.ag.ohio-state.edu/~natres**. *Equal Opportunity/Affirmative Action Employer.*

The Department of Biochemistry invites applications and nominations for a tenure-track position at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level. The applicant should have a vigorous interest in the general area of transcription and/or DNA repair in relation to cancer biology. The current strengths of the department are in protein chemistry, protein/nucleic acid interactions, cell biology, and regulation of gene expression. Multidisciplinary interactions are encouraged within the Case Western Reserve University NCI-designated Comprehensive Cancer Center. This position will be supported in part by an institutional grant by the Howard Hughes Medical Institute. Applicants should send curriculum vitae and statement of research plans and have three reference letters sent to: **Dr. Edward Stavnezer, Search Committee, Department of Biochemistry, School of Medicine, Case Western Reserve University, Cleveland, OH 44106-4935**. *CWRU is an Equal Opportunity/Affirmative Action Employer and encourages the applications of qualified women and minorities.*

FACULTY POSITION
VIROLOGIST

The Department of Dermatology at the University of Arkansas for Medical Sciences is seeking to fill a 12-month, tenure-track faculty position at either the **ASSISTANT** or **ASSOCIATE PROFESSOR** level. The ideal candidate should have research interests in the study of the pathogenesis, immunology, or biology of infections with human papilloma virus (HPV). The applicant must have a Ph.D., M.D., or D.V.M. or equivalent with postdoctoral experience. The individual will be expected to develop an independent research program and participate in educational activities within the Department. Currently, members of both the Department of Dermatology and the Department of Microbiology and Immunology are engaged in translational research associated with HPV, and it is anticipated that the individual would interface with those research programs. The individual would also have a secondary appointment in the Department of Microbiology and Immunology and would be a member of the graduate faculty of the Department. Address inquiries along with curriculum vitae, statement of present and future research interests, and the names of three references, to: **Thomas D. Horn, M.D., Department of Dermatology, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, AR 72205**. *The University of Arkansas for Medical Sciences is an Equal Opportunity Employer.*

DIRECTOR OF AEROSPACE AND UNDERSEA RESEARCH AND EDUCATION CENTER
Oklahoma State University
College of Osteopathic Medicine
Tulsa, Oklahoma

Responsible for the research and education programs of the Center. Holds a tenure-track faculty appointment at the **ASSISTANT** or **ASSOCIATE PROFESSOR** rank in the Department of Pharmacology and Physiology. The primary responsibility will be to obtain extramural funding and conduct research using the Center's hypobaric and hyperbaric chambers. Also responsible for aviation and environmental physiology training programs. Administrative responsibilities include personnel, budget, and facilities. Requires a Ph.D. in environmental physiology or related area, at least three years of postdoctoral experience, and an outstanding record of research productivity. Must meet required academic credentials for appointment to the Oklahoma State University Graduate College. A background in aviation education is preferred. The Center's facilities include two hypobaric chambers and a multiplace hyperbaric chamber, as well as laboratories, offices, classrooms, and an auditorium. Applicants should send a statement of professional goals and a curriculum vitae to: **Human Resources, OSU–COM, 1111 West 17th Street, Tulsa, OK 74107-1898** by March 1, 2000. *Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITION

The Waksman Institute of Microbiology at Rutgers, The State University of New Jersey, invites applications for a tenure-track **ASSISTANT PROFESSOR** position from individuals involved in mechanistic studies of macromolcular machines responsible for fundamental biological processes including recombination, replication, transcription, splicing, or translation. We are especially interested in applicants whose research will involve microbial systems and/or novel biochemical and biophysical approaches.

We seek individuals with demonstrated ability and commitment to conduct cutting-edge basic research and an interest to teach at the undergraduate and graduate levels.

Applications should include a curriculum vitae, a publication list, a brief description of research plans, and confidential letters of reference from at least four professional references. Applications should be directed to: **Dr. Richard H. Ebright, Chair, Macromolecular Machines Search Committee, Waksman Institute, Rutgers University, 190 Frelinghuysen Road, Piscataway, NJ 08854-8020**. *Rutgers University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

BIOLOGY FACULTY

Clarke College, a growing Catholic coeducational liberal arts college, is seeking candidates for two **TENURE-TRACK POSITIONS** in its six-person Biology Department beginning August 2000.

Chair/Neuroscience Faculty: Will teach neuroscience and attendant laboratories for physical therapy and biology majors, general biology and attendant laboratories, and will supervise undergraduate research projects. Chair responsibilities include faculty recruitment/evaluation/supervision/development, assisting with curriculum development, student advising, budgeting, enrollment management, etc. Earned Ph.D. required. Candidates should be specialists in neuroscience with a strong background in developmental biology. **ASSOCIATE PROFESSOR** preferred.

Gross Anatomy/Anatomy and Physiology: Will teach human gross anatomy for physical therapy majors, anatomy and physiology, and will supervise undergraduate research projects. Earned Ph.D. required. Candidates should be specialists in gross anatomy with cadaver dissection and have a strong background in physiology.

Screening for both positions begins February 1, 2000, and continues until positions are filled. Please send letter of introduction, curriculum vitae, transcripts, statements of research interest and teaching philosophy, and three reference letters (including telephone numbers) to: **Clarke College Human Resources Department, 1550 Clarke Drive, Dubuque, IA 52001-3198. Website: www.clarke.edu**. *Clarke is an Equal Opportunity Employer.*

FACULTY POSITIONS
DEPARTMENT OF BIOCHEMISTRY AND MOLECULAR BIOLOGY
Louisiana State University Health Sciences Center, New Orleans

Applications are invited for tenure-track/tenured positions at the **ASSISTANT PROFESSOR** to **FULL PROFESSOR** level. Applicants should have three years of postdoctoral experience with additional experience for advanced academic ranks. We seek candidates whose research is widely recognized and whose program has the potential for future funding (Assistant Professor) or is extramurally funded (Associate or Full Professor). The Health Sciences Center is undergoing expansion, with a Clinical Science Building due to open in the spring of 2000. The Molecular and Human Genetics Center, the Stanley S. Scott Cancer Center, and the Neuroscience Center are integral components of the University, and several faculty in the Department are members of these Centers. Interest and excellence in teaching are expected. The Department can be visited through our home page at **website: http://www.medschool.lsumc.edu/bioc/**. Interested individuals should send a curriculum vitae (including grant-funding history) with a bibliography, a short (three-page) summary of current or planned research, and the names and addresses of three references to the following: **Robert Roskoski, Jr., M.D., Ph.D., Fred G. Brazda Professor and Head, Department of Biochemistry and Molecular Biology, Louisiana State University Health Sciences Center, 1100 Florida Avenue, New Orleans, LA 70019-2799**. *Louisiana State University Health Sciences Center is an Equal Employment Opportunity/Affirmative Action Employer.*

STAFF ASSOCIATE
COLUMBIA UNIVERSITY

The Gertrude H. Sergievsky Center currently has a full-time position available for a Staff Associate to assist in coordinating a large study of aging and dementia in adults. Must be a medical school graduate and bilingual in Spanish/English. Salary is $31,000 with good benefits.

Qualified applicants should send their résumé to: **Richard Mayeux, M.D., Gertrude H. Sergievsky Center, P&S Box 16, 630 West 168th Street, New York, NY 10032**.

Columbia University takes Affirmative Action toward Equal Employment Opportunity.

POSITIONS OPEN

MILLER CHAIR OF PLANT DEVELOPMENT
INDIANA UNIVERSITY
Department of Biology

Applications and nominations are invited for the newly established Miller Chair in Plant Development. The successful candidate will bring an impressive record of research accomplishments recognized at the international level and a strong record of external grant funding. The holder of this Chair is to be conducting research that seeks to understand the biochemical bases of plant growth and development. The Chair offers an attractive salary and start-up package; a generous annual endowment income; and the opportunity to move into a newly renovated, state-of-the-art research building, together with other plant molecular biologists. For information about the Department of Biology, Indiana University, and Bloomington, visit our **website: http://www.bio.indiana.edu**.

Qualified individuals should send their curriculum vitae and description of current funding to: **Dr. Roger Innes, Department of Biology, Indiana University, 1001 East Third Street, Bloomington, IN 47405-3700. E-mail: rinnes@bio.indiana.edu**. Screening of applicants will begin immediately and will continue until the position is filled. *The Department of Biology seeks diversity in its faculty and encourages applications from women and minority scientists.* We also have a strong history of accommodating two-career couples and are in the middle of a major expansion and hiring phase.

MONITORING SPECIALIST
INTERNATIONAL CONSERVATION

The Wildlife Conservation Society at the Bronx Zoo seeks to hire a **SOCIOECONOMIC MONITORING SPECIALIST** to provide technical oversight for the design, implementation, and analysis of a new monitoring program for field conservation projects. Based in New York City, focus of this program will be on socioeconomic parameters and indicators of importance to biological conservation at the landscape scale, as well as project performance monitoring. Specialist will also coordinate reporting to donors (USAID) and synthesize monitoring lessons for broader application within the international conservation community. Candidates should have significant field experience in socioeconomic monitoring, proven analytical and reporting skills, and excellent interpersonal and communication skills. M.Sc. in social science or equivalent experience required. Ph.D. preferred. Fluency in Spanish strongly recommended; French optional. Salary in the $40,000 range. Benefits include three weeks of vacation, medical/dental, 401(K), and on-site parking. Send résumé and cover letter to include salary history and requirements to: **The Wildlife Conservation Society, Human Resources, Box PMS, 2300 Southern Boulevard, Bronx, NY 10460. E-mail: zrivera@wcs.org.**

ASSISTANT PROFESSOR
BIOLOGY

The Biology Department, Westfield State College, seeks an individual to fill a tenure-track position beginning fall 2000. A commitment to teaching is required, and research is strongly encouraged. Primary teaching responsibility will be human anatomy and physiology. Other assignments could include introductory-level biology courses and upper-level courses in physiology. Teaching graduate courses in our M.Ed. in biology program is also possible. A Ph.D. and experience in teaching at the college level are required. Please visit the department **website: biology.wsc.mass.edu**. Application deadline is March 1, 2000. Send a curriculum vitae, undergraduate and graduate transcripts, a statement of teaching and research interests, and three letters of reference to: **Dr. David A. Doe, Chair, Biology Department, Westfield State College, Westfield, MA 01086-1630. E-mail: ddoe@wsc.mass.edu**. *An Affirmative Action/Equal Opportunity Employer. Women, persons of color, and persons with disabilities are strongly encouraged to apply.*

UNCCHARLOTTE

Duke Energy Distinguished Professor of Environmental Engineering & Science

The William States Lee College of Engineering seeks qualified candidates for the Duke Energy Endowed Distinguished Professorship of Environmental Engineering & Science.

The College in collaboration with Duke Energy seeks an enthusiastic individual interested in developing an internationally recognized program in Environmental Engineering. Candidates should have an outstanding scholarly record in environmental engineering with a keen awareness of policy and regulatory issues. An individual with the ability to assemble and lead strong research and educational programs is desired. Qualifications include an earned doctorate in environmental engineering or a closely related field.

UNC Charlotte is a large metropolitan university with more than 17,000 students in six colleges. The campus is located adjacent to the University Research Park which includes First Union R&D Corp., IBM, EPRI, Verbatim and AT&T. Charlotte is the largest city in the Carolinas, and offers a host of cultural, educational, and social activities including professional theater, opera, symphony and dance as well as professional football, basketball, and NASCAR racing.

UNC-Charlotte's C. C. Cameron Applied Research Center provides excellent facilities for research in collaboration with regional business and industrial partners. Primary areas of research currently include materials science, precision engineering, optoelectronics, microelectronics, environmental engineering, biotechnology, biomedical engineering, and computer-integrated manufacturing.

Duke Energy Corporation is a global energy company with more than $29 billion in assets. Headquartered in Charlotte, N.C., the company reaches into more than 50 countries, producing energy, transporting energy, marketing energy and providing energy services. The Duke Energy Distinguished Professor will have the opportunity to develop a close working relationship with Duke Energy Corporation.

Forward nominations and applications to Chairperson, Duke Energy Endowed Distinguished Professorship Search Committee, The William States Lee College of Engineering, UNC Charlotte, 9201 University City Boulevard, Charlotte, NC 28223-0001. Review of applications will begin February 1, 2000 and continue until filled. Additional information is available at *www.coe.uncc.edu*. EEOAA employer.

ProteinChip Technology

Ciphergen Biosystems is currently expanding its US and European operations and is looking for ambitious, commercially-minded Ph.D. biochemists/biologists with excellent communication skills and proven problem solving abilities, at the following locations: San Francisco Bay Area, Los Angeles, New Jersey, St. Louis, Washington D.C., Research Triangle Park in North Carolina and Houston, TX, plus major European cities in France, Germany, Denmark, Switzerland, and Italy.

Field Scientist

Preferably, you will have substantial experience in Protein analysis, purification and/or characterisation in one or more of the following disciplines:

- **Receptor-ligand interactions**
- **Proteomics/Biomarker discovery**
- **Immunology**
- **Protein chemistry**
- **Immunoassay development**

Your role will involve working alongside our clients' scientists, in both industry and academia, developing protocols and rapidly solving biological problems using Ciphergen's proprietary ProteinChip® technology.

As well as being a talented research scientist, capable of strong analytical thinking and creativity, you will need good leadership and interactive skills as well as the ability to communicate effectively at all levels. The position involves extensive travel in your local area and occasionally trips to the head office in California.

Join the Protein Renaissance

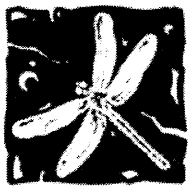
This is a unique opportunity to join a young, rapidly growing company that is working at the forefront of the 'Protein Renaissance' You will have the opportunity of working alongside our existing team of field scientists, as well as with our customers who are involved at the leading edge of research into the diagnosis, treatment and cure of the most challenging diseases facing us today.

We offer an excellent compensation package, including stock options. Please visit our website at www.ciphergen.com and send your resume to:

U.S. Resumes
Ciphergen Biosystems, Inc.
Attn: Human Resources
490 San Antonio Road
Palo Alto, CA 94306

European Resumes
Ciphergen Biosystems Ltd
Attn: Human Resources
Prior Road, Camberley
Surrey, GU15 1DA UK

or e-mail resume to **cv@ciphergen.com EOE**



UIC

TENURED/TENURE-TRACK FACULTY POSITIONS IN IMMUNOLOGY

The Department of Microbiology and Immunology, in the College of Medicine at the University of Illinois at Chicago (UIC), is seeking to fill two or more tenured/tenure track positions. UIC is the largest institution of higher learning in the Chicago area and is a major center for research and education. The faculty of the Department of Microbiology and Immunology has active and interdisciplinary research programs spanning several major disciplines, including molecular immunology, virology, microbial pathogenesis, host-pathogen interactions, and structural biology.

The successful candidate will be expected to develop and maintain a vigorous independent research program and participate in the research and graduate training programs of the Department. Generous laboratory space and start-up funds are available. Applicants should possess a Ph.D. or equivalent degree and have a proven track record in research as evidenced by consistent scholarly publications. Preference will be given to outstanding individuals whose research interests are focused on issues of immunology in general, and molecular immunology in particular.

For fullest consideration, please send an application, including curriculum vita, a brief statement of future research plans, and a list of references, by March 1, 2000 to:

Search Committee
Department of Microbiology and Immunology
University of Illinois at Chicago, College of Medicine
835 S. Wolcott (M/C 790)
Chicago, IL 60612-7344

For more information about the Department of Microbiology and Immunology, please visit our Web site: http://www.uic.edu/depts/mcmi/home.html. *The University of Illinois at Chicago is an Affirmative Action / Equal Opportunity employer. Women and minorities are encouraged strongly to apply.*

LANDSCAPE ECOLOGY

The Department of Wildlife Ecology and Conservation at the University of Florida invites applications at the **ASSISTANT PROFESSOR** level for a 12-month, tenure-track position in landscape ecology, with 60% research and 40% teaching responsibilities. The successful candidate will develop a nationally recognized program in landscape ecology. Teaching responsibilities will include a course in landscape ecology for advanced undergraduates and a graduate course that explores current theoretical approaches in landscape ecology and emphasizes modeling, GIS, and other analytical techniques. The individual will garner extramural funding to support a vigorous research program in landscape ecology. Candidates should have a Ph.D. in wildlife ecology, biology, natural resource management, or related field and have a strong background in GIS and landscape scale-modeling techniques. Application deadline is March 31, 2000. Please see **website: http://malthus.wec.ufl.edu** for a complete job description. Send curriculum vitae, statements of professional goals and teaching philosophy, official transcripts of academic work, and contact information for three references to: **Lyn Branch, Chair, Landscape Ecology Search Committee, Department of Wildlife Ecology and Conservation, P.O. Box 110430, University of Florida, Gainesville, FL 32611-0430. Telephone: 352-846-0552; FAX: 352-392-6984; e-mail: lcb@gnv.ifas.ufl.edu**. Position #915460. *The University of Florida is an Equal Opportunity/Equal Access/Affirmative Action Employer. Women and minorities are encouraged to apply.*

FACULTY POSITION

The Department of Microbiology and Immunology of the University of California, San Francisco, School of Medicine is seeking outstanding candidates to fill a tenure-track position in the area of microbial pathogenesis at the level of **ASSISTANT PROFESSOR**. In addition to departmental affiliation, the position includes membership in the Program in Biological Sciences and/or the Biomedical Sciences Program, the excellent campuswide graduate programs. The search will consider candidates with demonstrated creativity and research productivity in microbial pathogenesis. Interested candidates should send a curriculum vitae, a statement of future research plans, and names of three references by March 1, 2000, to: **Search Committee, c/o Toni Grimes, Department of Microbiology and Immunology, Box 0414, University of California, San Francisco, CA 94143-0414**. *UC is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

The National Cancer Institute has an opening for a **STAFF SCIENTIST** for a research program using transgenic and gene knockout mice. The individual will have overall responsibility for maintenance and oversight of mouse colonies. Duties include designing and implementing breeding strategies, genotyping, cryopreservation of mouse lines, and organization of collaborative studies. The individual will also conduct supervised research in transcription and developmental biology. Applicants should have a Ph.D., M.D., or equivalent degree; postdoctoral experience; and expertise in molecular biology and mouse genetics. Initial appointment is for five years. Applications should be submitted by February 29, 2000. To be considered, send a curriculum vitae and have three letters of recommendation sent to:

Bonnie Richards
Administrative Officer, OM
National Cancer Institute
Building 41, Room A101
41 Library Drive, MSC 5055
Bethesda, MD 20892-5055

NIH is an Equal Opportunity Employer.

POSITIONS OPEN

UNIVERSITY OF VICTORIA SCHOOL OF EARTH AND OCEAN SCIENCES
Victoria, British Columbia, Canada

Applications are invited for a tenure-track faculty position in the School of Earth and Ocean Sciences (SEOS) in atmospheric science (global climate dynamics, air-sea interaction, biogeochemical cycles, clouds and radiation). Hiring is expected to be at the **ASSISTANT PROFESSOR** level, with a possibility for a junior **ASSOCIATE PROFESSOR** position. Close interactions are fostered with nearby federal government laboratories of the Canadian Climate Centre and Institute of Ocean Sciences. SEOS has a commitment to research and teaching in all aspects of Earth system science.

Qualifications include the completion of a Ph.D. and demonstrated strong research and teaching potential. Duties will include teaching at undergraduate and graduate levels. Letters of application, clearly outlining the candidate's expertise; teaching experience and research interests; along with a curriculum vitae and names, addresses, FAX and e-mail addresses of four references should be sent by March 15, 2000, to: **Dr. C. R. Barnes, Director, School of Earth and Ocean Sciences, University of Victoria, P.O. Box 3055, Victoria, British Columbia V8W 3P6 Canada. FAX: 250-721-6200**.

In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. However, if suitable Canadian applicants cannot be found, other individuals will be considered. This position may be supported in part as a Research Scholar, Canadian Institute for Advanced Research. Visit our **website: http://ceor.seos.uvic.ca/seos**. *The University of Victoria is an Employment Equity Employer and encourages applications from women, aboriginal peoples, visible minorities, and persons with disabilities. An eligible woman candidate would be encouraged to apply for an NSERC University Faculty Award.*

The Department of Biological Sciences at The University of Alabama invites applications for a tenure-track **ASSISTANT PROFESSOR** position in microbial diversity/molecular microbial ecology to begin August 2000. Teaching includes graduate courses in area of specialty and participation in core undergraduate offerings. Candidates, who must have a Ph.D. and postdoctoral experience, should be interested in participating in research applying molecular phylogenetic methods in studies of aquatic microbial ecosystems. Appointees will be expected to develop active, externally funded research programs and to work closely with undergraduate and graduate students as advisors and directors of research. We are especially seeking individuals interested in vigorously interacting with our growing interdisciplinary research groups, such as the Center for Freshwater Studies and Coalition for Biomolecular Products. Each application should include a curriculum vitae, a letter of application indicating teaching philosophy and research goals, and at least three letters of reference sent to: **Dr. Amy Ward, Department of Biological Sciences, Box 870344, The University of Alabama, Tuscaloosa, AL 35487**. Review of applications begins February 18, 2000, and continues until the position is filled. For more information, visit our **website: http://www.as.ua.edu/biology/index.html**. *Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR, marine molecular biology. Tenure track, September 2000. Postdoctoral and teaching experience desirable. Teaching molecular and cell biology, biochemistry. Research involving undergraduates expected. Send curriculum vitae, statements of research interests and teaching philosophy, and three letters of recommendation to: **Dr. Sandra Shumway, Natural Science Division, Long Island University, Southampton College, Southampton, NY 11968**. Application review will begin February 15, 2000. **Website: www.southampton.edu**. *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

COMPUTATIONAL BIOLOGY

Bard College's Division of Natural Sciences and Mathematics is undertaking a major initiative to expand its programs in the computational sciences. Our goal is to be at the forefront of undergraduate institutions, integrating computation into a curriculum that is strong in the basic sciences. The initiative includes investments in facilities, equipment, support personnel, and new faculty in computer science and computationally intensive areas of biology and chemistry. As part of the first phase of this expansion, the Division is seeking applications for one or more positions in the broadly defined area of computational biology at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level starting July 1, 2000. Candidates must have Ph.D., a strong commitment to undergraduate education, a willingness to involve undergraduates in an ongoing research program, and an interest in developing interdisciplinary connections with other members of the Bard faculty. Start-up funding will be provided. The successful candidate will be involved in developing an innovative curriculum in which Bard undergraduates develop a strong foundation in the traditional fields but also become facile in the latest computational methods employed in those fields. Applicants should submit a letter of application, a curriculum vitae, statements of teaching and research interests, and three letters of recommendation to: **Michael Tibbetts, c/o Human Resources, Bard College, P.O. Box 5000, Annandale-on-Hudson, NY 12504**. Applications will be reviewed as received, and interviews will begin in mid-February 2000. *Affirmative Action/Equal Opportunity Employer.*

BIOLOGY
ECOLOGY/BOTANY

The Biology Department of St. Lawrence University invites applications for a **VISITING ASSISTANT PROFESSOR** position in ecology/botany, starting fall 2000. This may be extended to two years assuming satisfactory performance. A Ph.D. in botany, ecology, or a related field is required. The successful candidate will be expected to teach our ecology and vascular plants courses, as well as two other upper-level courses according to this person's expertise. Interested candidates should submit a letter of application, a curriculum vitae, a statement of teaching experience and philosophy, and have three letters of recommendation forwarded to: **Dr. T. Budd, Biology Department, St. Lawrence University, Romoda Drive, Canton, NY 13617**. Those interested can learn about the St. Lawrence biology department at **website: http://it.stlawu.edu/~biology**. The full position description is available at **website: www.stlawu.edu/personne:http/job.htm**. *St. Lawrence University is an Affirmative Action/Equal Opportunity Employer. Women, minorities, veterans, and persons with disabilities are encouraged to apply.* **Website: www.stlawu.edu.**

Faculty positions, Chemistry Department, University of Missouri–Rolla. Applications and nominations sought for two tenure-track **ASSISTANT/ASSOCIATE/PROFESSOR** positions in any area of chemistry that complements existing strengths of Department/campus. Preferred starting date is August 15, 2000. Ph.D. in chemistry and a record of vigorous research activity are required. Postdoctoral experience desirable. Responsibilities: Teach general chemistry and undergraduate and graduate courses in area of expertise; develop a strong, externally-funded research program; direct graduate and undergraduate research; and interact effectively with faculty, staff, and students to promote education. Applications will be considered until positions, contingent on funding, are filled. For additional information, **e-mail: chem@umr.edu**. Send application with a complete curriculum vitae, statement of research and teaching plans, and three letters of reference to: **Human Resource Services, Reference Number R53178, University of Missouri–Rolla, 1201 North Bishop, 1870 Miner Circle, Rolla, MO 65409-1050**. *University of Missouri–Rolla is an Affirmative Action/Equal Employment Opportunity Employer. Females, minorities, and persons with disabilities are encouraged to apply.*

Tenure Track Investigator

The Intramural Program of the National Institute on Aging (NIA) seeks a board eligible/board certified cardiologist for an expanding clinical research program at the Gerontology Research Center in Baltimore, MD. Candidate will develop research protocols for implementation in new Clinical Trials Unit. Opportunities for collaboration with scientists from NIA, National Institute of Drug Abuse and Johns Hopkins University School of Medicine. Skills in right and left heart catheterization, temporary pacemaker placement, echocardiography and exercise testing required. Competitive salary commensurate with qualifications and experience. U.S. Citizenship required. Send CV and three letters of reference to: **Chair, Search Committee for Tenure Track Position, LCI/, C/O Teri Stachowiak, Personnel, Room 1-D09 (#99-47), 5600 Nathan Shock Drive, Baltimore, MD 21224-6825** by March 1, 2000

NIA is an Equal Employment Opportunity Employer

Cryobiologist

UNIVERSITY OF CALGARY

On the edge and leading the way. *The University of Calgary is a modern university that builds a spirit of discovery and inquiry while delivering a dynamic life and quality learning experience.*

The **Department of Cell Biology & Anatomy** and the **Joint Injury & Arthritis Research Group** invite applications for a full-time academic position in cryobiology at the Assistant Professor level or higher. This position offers an excellent opportunity to develop an independent research program to investigate mechanisms of injury associated with cryopreservation of musculoskeletal tissues, as well as collaborative interactions within a multidisciplinary research environment. While duties will also include teaching and graduate student supervision, 75% of time will be protected for research.

The JIARG is a multidisciplinary collective of 36 clinicians, clinician scientists, basic scientists, kinesiologists, physiotherapists, engineers and biophysicists, all with overlapping expertise and interests in the mechanisms of joint injury and arthritis. JIARG is located within the rapidly growing Faculty of Medicine, which is in the process of building a major new research facility. Calgary is a vibrant, multicultural city of ~850,000 near the Rocky Mountains, Banff National Park and Lake Louise.

Qualifications include a PhD or equivalent degree demonstrating capability in this area; advanced postdoctoral training in research; a proven record of research excellence in the area of cryobiology; and a background in the investigation of fundamental mechanisms of cryobiological injury in mammalian cells and tissues, a strong interest in tissue cryopreservation and transplantation of musculoskeletal tissues, and experience related to tissue banking. Salary support and start-up funding will be available through successful application to the Alberta Heritage Foundation for Medical Research, the Medical Research Council of Canada and/or the Arthritis Society.

Please submit a curriculum vitae, a statement of research interests, and arrange to have three letters of reference sent directly, by: **March 15, 2000**, to:

Dr. R. Bray, Joint Injury & Arthritis Research Group
Department of Surgery, 3330 Hospital Drive N.W., Calgary, Alberta, Canada T2N 4N1

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

www.ucalgary.ca

MAYO CLINIC POSTDOCTORAL POSITION

A postdoctoral position is available immediately with an active group investigating the immune response to Theiler's virus. The central focus of this research effort is to understand the role of virally encoded peptides that are recognized by cytolytic T lymphocytes in inducing resistance versus susceptibility to demyelinating disease in a mouse model of multiple sclerosis. A PhD, MD or DVM degree is required and experience in virology, in vitro assays of cellular immunology and basic methods of molecular biology is preferable. Send a curriculum vitae, description of research experience, and the names and addresses of three references to:

Moses Rodriguez, MD
(rodriguez.moses@mayo.edu)
Or
Larry Pease, PhD
(pease.larry@mayo.edu)
Department of Immunology
Mayo Clinic
200 First Street SW
Rochester, MN 55905

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

DEAN OF THE GRADUATE SCHOOL OF BIOMEDICAL SCIENCES
The University of Texas Health Science Center at San Antonio

The University of Texas Health Science Center at San Antonio (UTHSCSA) seeks a dynamic and experienced academic leader to serve as Dean of the Graduate School of Biomedical Sciences (GSBS). The GSBS, one of five schools comprising the UTHSCSA (the others - Allied Health Sciences, Dental, Medical, and Nursing), consists of seven basic science departments with 150 tenure-track faculty and supervises the education of 550 students enrolled in M.S. and Ph.D. degree programs. The GSBS is also involved in teaching the basic science curricula throughout the UTHSCSA and administering interschool and intercampus graduate programs in pharmacological sciences, radiological sciences, allied health, dentistry, and nursing.

Responsibilities: The Dean is the chief advocate and spokesperson for the basic science departments and oversees extramural funds in excess of $30 million. S/he is also responsible for advancing the quality of graduate education and research endeavors in the biomedical sciences and fostering diversity and excellence in recruitment and retention of faculty, students, and staff. The GSBS is the largest academic venue for doctoral training in the biosciences in South Texas, providing unique academic and demographic missions, partnerships and challenges throughout the border region. The Dean reports directly to the President of the UTHSCSA and serves on the President's Executive Committee and other key committees throughout the campus, community, state, and nation.

Qualifications: The successful candidate will have earned the Ph.D. and/or other relevant doctoral degrees, demonstrated an outstanding record of scholarly achievement in biomedical research and education, and be qualified by academic performance to be appointed to the rank of professor. S/he will have successfully trained graduate students and postdoctoral fellows, secured and managed sponsored research grants, collaborated with colleagues across disciplines, and interfaced with educational, government, industrial, and philanthropic organizations. In addition, the candidate must have well-documented academic administrative abilities and experience in effective budget preparation and resource allocation. The applicant should have excellent communication and interpersonal skills. The Dean position is available in the summer of 2000. The screening process will proceed upon receipt of completed applications and will continue until the position is filled.

Applicants should submit a letter of interest, curriculum vitae, and the names, positions, addresses, and phone numbers of four references to:

Chairperson of the Search Committee for Dean of the GSBS
Department of Microbiology, Mail Code 7758
The University of Texas Health Science Center at San Antonio
7703 Floyd Curl Drive
San Antonio, TX 78229-3900

The UTHSCSA is an Equal Employment Opportunity/Affirmative Action Employer. The UTHSCSA is committed to diversity and equality in education and employment. Additional information concerning the campus may be found at website: **http://www.uthscsa.edu**. Telephone inquiries can be directed to 210-567-3939.

BIOINFORMATICS
BOSTON UNIVERSITY

The Department of Biomedical Engineering of Boston University is seeking a senior faculty member who will play a leading role in the evolution of a new computational genomics and bioinformatics program. Appointment will be preferably at the level of **FULL PROFESSOR OF BIOMEDICAL ENGINEERING**, but well-established **ASSOCIATE PROFESSOR** candidates will also be considered. Candidates will have the potential for joint appointment in other departments. A successful candidate will be expected to bring with them a strong research program, and duties will also include course development and teaching. Candidates should have a Doctoral degree. While biomedical engineering is the preferred degree, Doctoral degrees in applied mathematics, computer science, computational chemistry, or molecular biology are also acceptable if the candidate can demonstrate a strong computational and engineering knowledge base as well.

Application packages must include five copies of a current curriculum vitae and five copies of a single recent publication. We also require five copies of a short letter describing the significance of the candidate's prior research and the intended direction of their future research. These documents should be mailed to the following address:

Dr. Kenneth R. Lutchen
Chair, Department of Biomedical Engineering
Boston University
44 Cummington Street
Boston, MA 02215-2407 U.S.A.

The deadline for receipt of applications will be March 4, 2000. *Boston University is an Equal Opportunity Employer.*

ASSISTANT/ASSOCIATE PROFESSOR
BASIC SCIENCE FACULTY POSITION
ILLINOIS COLLEGE OF OPTOMETRY

The Illinois College of Optometry invites applications for a full-time faculty position at the Assistant/Associate Professor level in the Department of Basic and Health Science with emphasis in one or more of the following biomedical sciences: physiology, immunology, or pathophysiology. This position will be available July 1, 2000. A Ph.D. in the relevant discipline is required. The successful applicant will be charged with enhancing and promoting excellence in teaching, research, and service. Primary teaching responsibilities include human physiology and pathophysiology in the first and second year of the professional optometric curriculum. The candidate will also be expected to maintain a prominent level of scholarly activity. Applicants should possess significant classroom teaching experience, the ability to interact with clinical faculty in the optometric curriculum, and a strong desire to establish an independent research program. Rank and salary will be commensurate with experience. A letter of intent, current curriculum vitae, and the names and addresses of three professional references should be submitted by March 1, 2000, to: **Illinois College of Optometry, 3241 South Michigan Avenue, Chicago, IL 60616. Attention: Human Resources–FAC.**

Rensselaer Polytechnic Institute: The Department of Science and Technology Studies invites applications for the position of **DEPARTMENT CHAIR** at the rank of **TENURED FULL PROFESSOR**. The ideal candidate has experience in program building and will be able to facilitate interdisciplinary collaboration among the humanities and social sciences and between them and other schools in the university, such as engineering, architecture, and science. Send curriculum vitae, letter of application, and names of three references to: **Chair, Search Committee, STS Department, Rensselaer Polytechnic Institute, Troy, NY 12180-3590**. Review of applications will begin March 1, 2000, and continue until the position is filled. The preferred starting date is August 1, 2000. *Rensselaer is an Equal Opportunity Employer and encourages applications from women and members of minority groups.*

POSITIONS OPEN

PHYSICAL CHEMISTRY: ASSISTANT PROFESSOR. Cleveland State University invites applications for a tenure-track faculty position at the level of Assistant Professor in physical chemistry, starting August 21, 2000. The Department of Chemistry offers B.S., M.S., and Ph.D. degrees. The Ph.D. program specializes in clinical/bioanalytical chemistry and is jointly administered with the Cleveland Clinic Foundation. Applicants must have a Ph.D. in chemistry or a related field and be able to both develop a nationally competitive research program and teach general and undergraduate/graduate physical chemistry courses. Postdoctoral experience and demonstrated accomplishments in research that complement existing expertise in the Department are preferred. All research specialties will be considered; however, expertise in computational studies of biological systems, bioinformatics, biomolecular spectroscopy, biosurface science, or related fields is especially desired.

Qualified applicants should submit a curriculum vitae, a description of research plans, a statement of teaching experience and/or interests, copies of graduate transcripts, and should arrange for three letters of recommendation to be sent to: **Dr. David W. Ball, Chair, Physical Chemistry Search Committee, Department of Chemistry, Cleveland State University, Cleveland, OH 44115-2440. E-mail: d.ball@popmail.csuohio.edu**. Review of the applications will begin on February 14, 2000, and will continue until the position is filled. For further information about the Department, visit the **website: http://www.csuohio.edu/chemistry; Telephone: 216-687-2456; FAX: 216-687-9298**. *Cleveland State University is an Affirmative Action/Equal Opportunity Employment Employer. Minorities/Females/Disabled/Veterans encouraged.*

ASSISTANT PROFESSOR
WETLANDS ECOLOGY

The Center for Earth and Environmental Science at Plattsburgh State University of New York seeks a full-time, tenure-track position in wetlands ecology beginning fall 2000. Qualifications: Ph.D. degree required; must be an effective teacher. Ability to undertake research in the Adirondack/Lake Champlain region is an asset. Responsibilities: Teach general ecology each semester, wetlands ecology, and other related courses in their areas of expertise.

Salary: $37,000 minimum, dependent upon qualifications; excellent benefits. Review of applications begins February 15, 2000, and will continue until position is filled. Please send or FAX application, statement of teaching philosophy and research interests, curriculum vitae, transcripts, and three letters of reference to: **Chair, Search Committee (PJ# 2395-SCI), c/o Human Resources, Plattsburgh State University of New York, 101 Broad Street, Plattsburgh, NY 12901-2681. FAX: 518-564-5060**. *Plattsburgh State University is an Affirmative Action/Equal Opportunity Employer. Applications from women and minority candidates are especially welcome.*

RESEARCH POSITIONS

Northwest Hospital is a growing community hospital located in Seattle, Washington, that is committed to both research and patient care. Northwest Hospital is known for innovative therapies for cancer, including brachytherapy and immunotherapy. The Molecular Medicine Department is currently expanding its research facilities and staff. New facilities are to be completed fall 2000. The department seeks funded **INVESTIGATORS** at all levels who have an interest and vigorous research program in some area of cancer research. Current programs are in the areas of signal transduction, cell surface carbohydrates, reactive oxygen species, nutrition and diet, gap junctions, tumor suppressor genes, and antigen discovery and immunotherapy. Highly competitive salary and benefits are available. Reply with curriculum vitae, list of publications, funding history, and one-page description of research plans to: **Chairperson, Molecular Medicine, Northwest Hospital, 2203 Airport Way South, Suite 200, Seattle, WA 98134. FAX: 425-608-3026; e-mail: marilyn@nwbio.com.**

POSITIONS OPEN

DIRECTOR OF RESEARCH AND DEVELOPMENT
UNIVERSITY OF NEBRASKA MEDICAL CENTER
Olson Center for Women's Health
Department of Obstetrics and Gynecology

The Department of Obstetrics and Gynecology at the University of Nebraska Medical Center is seeking a Director of Research and Development for the Olson Center for Women's Health. The Olson Center for Women's Health, which resides within the Department of Obstetrics and Gynecology, is a multidisciplinary women's health center with endowments for education and research. Professional responsibilities for this position will include leading the Department of Obstetrics and Gynecology's clinical research efforts and facilitating and coordinating collaborative research between departments within the College of Medicine and the medical center at large. The ideal candidate for this position will possess a Ph.D. degree or an M.D. degree. Equivalent degrees in biostatistics, epidemiology, or public health are also acceptable. Academic rank for this tenure-track position is open and dependent on qualifications and experience. Candidates currently active in independent investigation are preferred, and current grant support is desirable but not required. Interested individuals should forward their curriculum vitae to: **John T. Repke, M.D., Chris J. and Marie A. Olson Professor and Chairman, Department of Obstetrics and Gynecology, Chairman, Advisory Committee, Olson Center for Women's Health, University of Nebraska Medical Center, 983255 Nebraska Medical Center, Omaha, NE 68198-3255. Telephone: 402-559-2711; FAX: 402-559-2712; e-mail: jrepke@unmc.edu.** *UNMC is an Affirmative Action/Equal Opportunity Employer.*

MELANOMA RESEARCHER, THE PENNSYLVANIA STATE UNIVERSITY COLLEGE OF MEDICINE: The Penn State University College of Medicine invites applications and nominations for a scientist working on fundamental and/or clinical aspects of melanoma. This tenure-track position will be filled at either the **ASSISTANT** or **ASSOCIATE PROFESSOR** level. This position is funded in part by the Foreman Foundation in memory of John Bruno, a Penn State football player who was a young victim of melanoma. The successful candidate for this high-visibility position will develop a research program focused in melanoma or research related to melanoma and will interact with other basic and clinical cancer researchers. The successful candidate will use modern molecular approaches to address issues related to the initiation, progression, metastasis, diagnosis, and/or treatment of melanomas. There is a significant basic and clinical research effort in melanoma at Penn State, providing opportunities for collaboration. Evidence of successful scholarship will be determined by publications and/or funding. Applicants must have a Ph.D., M.D., or M.D./Ph.D. degree and several years of postdoctoral training. Applicants should submit a curriculum vitae, selected reprints, names of three references, and a statement of research goals to: **Dr. Mel Billingsley, Chairman, Melanoma Search Committee, Pos. #: S–6850, Department of Pharmacology H078, Penn State University College of Medicine, Hershey, PA 17033**. Closing date for applications will be April 1, 2000. *Affirmative Action/Equal Opportunity Employer.*

TECHNICAL COMMUNICATION/
SCIENCE NEWS WRITING
UNIVERSITY OF WASHINGTON

GRADUATE RESEARCH ASSISTANTSHIP available fall 2000 to study issues in science news reporting. Other opportunities in the department include new media design, usability testing, rhetoric of digital media. **Website: www.uwtc.washington.edu**. Applications preferred by February 15, 2000. Contact: **Program Coordinator, Technical Communication, University of Washington, Box 352195, Seattle, WA 98195-2195. Telephone: 206-543-7108.**

Biotechnology

Novartis Agricultural Discovery Institute Inc. (NADII), is one of the largest single fully funded research endeavors dedicated to agricultural genomics. We apply cutting-edge biotechnology to match genes with traits and provide advanced technologies that can be used widely in agribusiness research for the development of gene-based products. We currently seek the following talented and enthusiastic individuals to join our Plant Health department:

POSTDOCTORAL ASSOCIATES

Successful candidates will join collaborative efforts to study plant-pathogen interactions, taking advantage of genomics and proteomics platforms available from our institute. Specific requirements for these two positions are indicated below:

Project Scientist: Fumiaki Katagiri, Ph.D.
Requires substantial experience in microscopy in addition to Ph.D. in Molecular Biology, Biochemistry, or Genetics. Experience in plant systems is a plus but not necessary.
Job Code: PD/FK-SCI

Project Scientist: Jane Glazebrook, Ph.D.
Requires Ph.D. in Molecular Biology or Genetics. Experience in plant systems is a plus but not necessary.
Job Code: PD/JG-SCI

NADII offers excellent compensation and a great benefits package, including 401(k). For immediate and confidential consideration, please send resume including salary history and expectations to: Novartis Agricultural Discovery Institute, Inc., HR Dept./Job Code, 3115 Merryfield Row, Suite 100, San Diego, CA 92121-1102. Fax: (858) 812-1102. No phone calls, please. EOE

NOVARTIS

BIOLOGIST/CHEMIST

Screening Technologies Branch
Developmental Therapeutics Program, DCTD
National Cancer Institute ● National Institutes of Health

The Screening Technologies Branch (STB) of the Developmental Therapeutics Program is seeking candidates for a Biologist/Chemist position, GS-13/14. This is a full-time, extramural, civil service position. Investigators in STB are responsible for developing new knowledge about potential targets for anticancer drugs and investigating drug mechanisms of action. The Biologist/Chemist will collaborate with other investigators but have a high degree of independence studying mechanisms of mitosis and antimitotic drugs. Candidates must possess a Ph.D. or M.D. degree and have relevant post-doctoral experience; U.S. citizenship is required.

The incumbent will serve as a laboratory investigator who specializes in the cell biology, biochemistry and biophysics, genetics, and pharmacology of the microtubule and microfilament components of the cytoskeleton and of other cellular components involved in mitosis. **Applicants must address the following rating criteria: 1)** Ability to organize and manage a team effort to develop new knowledge about microtubule structure, function, and/or pharmacology and/or related mechanisms of cell division and/or defining mechanisms of action of new drugs that interfere with cell division; **2)** Ability to communicate in writing and verbally about scientific research activities; **3)** Ability to plan, coordinate, implement and achieve research goals and priorities.

Salary range is $58,027-$89,142 per annum, with a potential 4.8% increase expected beginning January 2000. Benefits include health and life insurance options, retirement, paid holidays and vacation leave.

To obtain the necessary application information, please visit: http://career-here.nih.gov, vacancy announcement **NCI-99-2346.** You may also call (301) 402-2789 to request a fax copy of the vacancy announcement (Fax ID: 1894). Send application to:

NIH/NCI/HRMCB, Executive Plaza South, Suite 550
6120 Executive Blvd., MSC 7209, Rockville, MD 20852-7209
by the closing date of **February 11, 2000.**

NIH/NCI is an Equal Opportunity Employer

ANNOUNCEMENTS

NATIONAL SPACE BIOMEDICAL RESEARCH INSTITUTE

Special Announcement to Institutions

The National Space Biomedical Research Institute (NSBRI) announces an opportunity to participate in the core research program of the NSBRI. The release date for this announcement is December 28, 1999.

NSBRI Announcement 99-02
An Opportunity to Participate in the Core Research Program of the National Space Biomedical Research Institute: Formation of New Research Teams

This announcement is available electronically via the Internet at http://www.nsbri.org

Letter of Intent Due: March 17, 2000
Proposals Due: May 5, 2000

Paper copies of this Announcement are available to those who do not have access to the Internet by calling 713-798-7412 or by writing to:

R. J. White, NSBRI
One Baylor Plaza
NA-425
Houston, TX 77030

AWARDS

AWARDS FOR INTERNATIONAL RESEARCH AND TRAINING FROM THE FOGARTY INTERNATIONAL CENTER (FIC) AT NIH

The following new programs are available:

INTERNATIONAL RESEARCH SCIENTIST DEVELOPMENT AWARDS (IRSDA)
This individual mentored research award supports basic, behavioral, social science and clinical biomedical research by postdoctoral U.S. scientists in developing countries.

INTERNATIONAL MALARIA RESEARCH TRAINING PROGRAM AWARD
This institutional award supports collaborative malaria research and training programs as part of ongoing, malaria research projects in Africa and other highly endemic regions of the world.

Deadline: March 29. Information may be obtained from the Fogarty International Center web site:
http://www.nih.gov/fic/opportunities/index.html

CONTACT INFORMATION:

Dr. Kathleen Michels, IRSDA Program: **Kathleen_Michels@nih.gov**
Dr. Barbara Sina, Malaria Program: **Barbara_Sina@nih.gov**

Fogarty International Center
Division of International Training and Research
Building 31, Room B2C39
National Institutes of Health
Bethesda, MD 20892-2220
Tel: 301-496-1653 Fax: 301-402-0779

ASSISTANT OR ASSOCIATE PROFESSOR OF PHYSIOLOGY. The Medical College of Georgia, a unit of the University System of Georgia, invites applications for two tenure-track positions in the Department of Physiology and Endocrinology beginning July 1, 2000, or thereafter. A D.V.M., M.D., or Ph.D. with postdoctoral research experience is required. Successful candidates are expected to establish active, independent programs of extramurally funded research in the areas of cardiovascular and renal physiology, neuroscience, reproductive endocrinology, or developmental biology to complement research strengths and goals of the Department and Medical College. Applicants are also expected to have teaching experience and be committed to teaching students in the Schools of Medicine, Allied Health Sciences, and Graduate Studies. For consideration, applicants should submit a curriculum vitae, a statement of research interests, and three letters of reference to: **Dr. Tom Mills, Search Committee Chair, Department of Physiology and Endocrinology, Medical College of Georgia, Augusta, GA 30912-3000**. Only applications received by March 15, 2000, are assured full consideration. Information about the Department can be obtained at: **website: http://www.mcg.edu/SOM/PhyEndo/index.html**. *The Medical College of Georgia is an Affirmative Action/Equal Educational and Employment Opportunity Institution and does not discriminate on the basis of race, religion, sex, age, national origin, or disability in employment or provision of services.* J-00118773

OBERLIN COLLEGE
CELL BIOLOGY/NEUROSCIENCE

The Department of Biology at Oberlin College invites applications for a full-time, noncontinuing faculty position for the 2000–2001 academic year (nine-month appointment). The incumbent will teach two upper-division undergraduate courses that include laboratory as follows: a course in immunology or virology and a course that complements the existing Neuroscience Program curriculum. Examples include neuroimmunology, neuroendocrinology, and learning and memory. Supervision of undergraduate research projects is desirable. Consideration will be given to applications for a one-semester appointment to teach one course with laboratory. Among the qualifications required for the appointment is the Ph.D., in hand or expected, by December 2000. Candidates must demonstrate interest and potential excellence in undergraduate teaching. To be assured of consideration, letters of application, including a curriculum vitae, graduate transcript, and three letters of reference, should be sent to: **Dr. Catherine A. McCormick, Chair, Department of Biology, Oberlin College, Oberlin, OH 44074**, by March 1, 2000. Application materials received after that date may be considered until the position is filled.

Oberlin College admitted women since its beginnings in 1833 and has been historically a leader in the education of African Americans.

BIO-ACOUSTICIAN

We are seeking a broadly trained Biologist with a strong background in acoustics whose research interests include understanding how vertebrates, particularly marine species, use sound to communicate with conspecifics; and orient; navigate; and forage. The ideal candidate will have a Ph.D. in the biological sciences and will complement and interact with existing staff whose research strengths are in the ecology, physiology, and behavior of marine mammals, birds, and turtles. Candidates should have good writing, verbal, and computer skills and will be expected to maintain a vigorous, independent research program. Please send a curriculum vitae, at least three letters of recommendation, and up to three reprints or manuscripts to: **Brent S. Stewart, Ph.D., J.D., Hubbs–Sea World Research Institute, 2595 Ingraham Street, San Diego, CA 92109.**

The Hubbs–Sea World Research Institute is a not-for-profit marine research institution whose mission is to "return to the sea some measure of the benefit derived from it" through research, conservation, and education.

POSITIONS OPEN

DIRECTOR
EDUCATION AND RESEARCH INITIATIVES (ERI)
(Formerly INEEL Institute)

The **DIRECTOR OF ERI** reports to the Executive Vice President of Research and Development at Idaho National Environmental and Engineering Laboratory (INEEL). INEEL is managed by Bechtel B&W Idaho, LLC (BBWI), and is located in Idaho Falls, Idaho. The Director of the ERI will work closely with the Inland Northwest Research Alliance (INRA), a nonprofit organization formed by the presidents of seven Northwest universities for the purpose of supporting research programs at the INEEL and elsewhere in the inland Northwest. The ERI Director is responsible for management of the technical library and information center resources, academic and educational relations, facilitating laboratory-directed research initiatives, and professional development for INEEL employees.

Minimum qualifications: earned doctorate. Qualification for appointment as an adjunct faculty member at an INRA university; eligible for DOE access authorization.

Desired qualifications: (1) successful record of participation in university research programs; (2) administrative/management experience in academic affairs, continuing education, and/or professional staff development; (3) demonstrated experience in designing employee development and training programs; (4) experience in designing and supervising library resources to support educational programs; (5) understanding of graduate program delivery on-site and through distance education and the ability to implement such programs; (6) knowledge of appropriate technologies for asynchronous delivery of courses and programs and the ability to develop and deliver such programs; (7) familiarity with the Department of Energy programs; (8) and *demonstrated commitment to Affirmative Action and Equal Opportunity.*

To apply: Send a letter of application outlining relevant experience and a current résumé along with the names, addresses, telephone numbers, and e-mail addresses of no fewer than three references to:

Dr. Brian Pitcher, Chair
Search Committee for Institute Director, INEEL INRA
1776 Science Center Drive
Idaho Falls, ID 83402-1575
E-mail: pattybh@uidaho.edu

Review of applications will begin on February 21, 2000. *INEEL; Bechtel B&W Idaho, LLC; and the INRA are Equal Opportunity Employers.*

MOLECULAR OR CELL BIOLOGIST: bone or cartilage research. The Albert Einstein Healthcare Network seeks candidates for an **ASSISTANT** or **ASSOCIATE SCIENTIST** in the Department of Orthopaedics in the area of molecular or cell biology related to bone or cartilage research. The applicant must possess a Doctorate in an appropriate area and must maintain a competitively funded research program. The candidate may be eligible for a faculty appointment at Thomas Jefferson University. Applicants should submit their curriculum vitae, bibliography, brief description of their funded research activities, and three letters of reference. The materials should be sent to: **John A. Handal, M.D., Chairman, Department of Orthopaedics, Albert Einstein Healthcare Network, 5501 Old York Road, Philadelphia, PA 19141**. *Equal Employment/Affirmative Action Employer.*

POSTDOCTORAL POSITION available to study the regulation of growth factors by heparan sulfate proteoglycans. We use a wide range of approaches to study the coreceptor function of proteoglycans in a number of cell systems (including vascular, pulmonary, and ocular). Ph.D. in biochemistry, cell biology, or molecular biology is desirable. Send curriculum vitae and names of three references to: **Dr. Matthew A. Nugent, Department of Biochemistry, Room K225, Boston University School of Medicine, Boston, MA 02118. FAX: 617-638-5339.**

POSITIONS OPEN

CHIEF
LABORATORY OF MYCOBACTERIA

U.S. Food and Drug Administration (FDA) Center for Biologics Evaluation and Research (CBER), Division of Bacterial, Parasitic, and Allergenic Products, invites applications for the position of Chief, Laboratory of Mycobacteria. The Laboratory is responsible for conducting research and regulatory review related to the cellular immune responses to mycobacteria. This is a supervisory, interdisciplinary position appropriate for a Physician, Chemist, Microbiologist, or Biologist with postgraduate training. The Laboratory Chief is responsible for originating, developing, conducting, and leading a research program related to the biology of mycobacteria and/or the human cellular response to these and related organisms. An extensive background in immunology and demonstrated experience in conducting research is required. Laboratories are located on the NIH campus in Bethesda, Maryland. *U.S. citizenship is required.* Salary range for Chemists, Microbiologists, and Biologists is $71,954 to $110,028. Salary range for physicians is $76,978 to $110,028. Physicians may also be eligible for either a physician's comparability allowance (PCA) up to $20,000 per annum or physician special pay up to $157,000. Salary is commensurate with education and experience and is dependent upon the research qualifications of the candidate as determined by the CBER Peer Review Board. For further information on where and how to apply and to obtain appropriate forms, please **Telephone: Ms. Maureen Walter, 301-496-1014**. *FDA is an Equal Opportunity Employer.*

DIVISION DIRECTOR
NATURAL RESOURCES AND ENVIRONMENT

The United States Department of Agriculture Cooperative State Research, Education, and Extension Service (CSREES) seeks a qualified candidate to serve as Division Director for the National Research Initiative Competitive Grants Program Natural Resources and Environment Division. Candidates must have an advanced degree with major study in a natural resources-related discipline, such as natural resource management, forestry, ecology, ecosystem science, environmental sciences related to agriculture, etc. Applicants also should have supervisory experience. *Candidates must be U.S. citizens,* and it is preferable that they have a Ph.D. degree or equivalent experience.

Closing date is March 14, 2000. Applicants must address the Quality Ranking Factors listed in the vacancy announcement. Contact: **Dr. Sally Rockey; Telephone: 202-401-1761; e-mail: srockey@reeusda.gov** for more information. Application procedures and forms are available from: **The Human Resources Division; Telephone: 202-720-6130; website: http://www.reeusda.gov/hrd/SOM-0593.htm**. *USDA is an Equal Opportunity Employer.*

SEARCH REOPENED
ENVIRONMENTAL SCIENCE AND POLICY IN LATIN AMERICA
Resident Faculty, Undergraduate Semester Abroad Program, Organization for Tropical Studies (OTS), and Duke University
Office of Study Abroad

Duties include collaborating in the design and implementation of a semester-long, general field course in environmental science and policy in Costa Rica. This course is part of the four-course Duke/OTS Undergraduate Semester Abroad Program. Requirements include Ph.D. in environmental science, anthropology, policy or related field; experience in environmental policy and management issues in Latin America; and either bilingual or English speaker with strong Spanish language skills. Preference will be given to candidates with a strong background in ecology and demonstrated capacity to work across disciplines. Salary and benefits competitive. Closing date: February 28, 2000. Send cover letter, curriculum vitae, and names and e-mail addresses of four references to: **Academic Director, OTS, Box 90633, Durham, NC 27708**. *Equal Opportunity/Affirmative Action Employer.*

MEDICAL COLLEGE OF WISCONSIN

Biophysics Research Institute is seeking two Assistant Professor, tenure track faculty appointments.

One is in fMRI. Our focus is on contrast mechanisms, MRI technology development, image processing, and neuroscience. Excellent access to our fMRI-dedicated 1.5 and 3T scanners. Send CV, statement of research background, interests, and three letters of reference to **Dr. Shi-Jiang Li, Medical College of Wisconsin, 8701 Watertown Plank Road, Milwaukee, WI 53226.** For more information email: sjli@mcw.edu or visit http://www.biophysics.mcw.edu

One is in EPR spectroscopy with experience in site directed spin labeling. Send CV, statement of research background, interests, and three letters of reference to **Dr. Jimmy Feix, Medical College of Wisconsin, 8701 Watertown Plank Road, Milwaukee, WI 53226.** For more information email: jfeix@mcw.edu or visit http://www.biophysics.mcw.edu

The Medical College of Wisconsin is an Equal Opportunity/Affirmative Action Employer - M/F/D/V

ANNOUNCEMENTS

NATIONAL INSTITUTES OF HEALTH
UNDERGRADUATE SCHOLARSHIP PROGRAM

Undergraduates can train – and be mentored – at the cutting edge of biomedical research while receiving scholarship support.

The Undergraduate Scholarship Program (UGSP) is sponsored by the National Institutes of Health (NIH), the Federal Government's premier biomedical research and research training agency. NIH offers scholarships to qualified undergraduates who are committed to a career in biomedical research.

Scholarships of up to $20,000 per year support tuition, educational, and qualified living expenses (room, board, transportation) while students pursue an undergraduate degree.

For each award year, scholars work 10 weeks (with salary/benefits) in our research laboratories in Bethesda, MD. They are assigned mentors, participate in developmental and science enrichment seminars, and are provided with housing and transportation. After graduation, they work 1 year of full-time employment at NIH for each year of scholarship award.

WE SEEK YOUR ASSISTANCE IDENTIFYING STUDENTS WHO:

- Are committed to a career in biomedical research;
- Are from a disadvantaged background;
- Have a GPA of at least 3.5 or are in the top 5 percent of their class;
- Are a U.S. citizen, national, or permanent resident; and
- Are enrolled or accepted for enrollment as full-time students at a qualified accredited institution.

FOR MORE INFORMATION, CONTACT THE UGSP AT:

- Internet: http://ugsp.info.nih.gov
- E-mail: ugsp@nih.gov
- Phone: 1-800-528-7689
- TTY: 1-888-352-3001

This is a special opportunity for special students.

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

VISIT OUR INTERNET SITE FOR ON-LINE APPLICATIONS

St. Jude Children's Research Hospital

ALSAC • Danny Thomas, Founder

POSTDOCTORAL POSITIONS

Postdoctoral positions are available for those who wish to use their skills and determine the biological and physiological function and regulation of two new members of the ABC transporter family. Candidates will use contemporary approaches in molecular and cell biology to expand current knowledge of the function and regulation of these genes in cell survival and drug resistance. The ideal candidate will have a strong background in molecular and/or cell biology. Experience in cell culture and the genetic manipulation of mice would be advantageous. Applicants should have obtained a Ph.D. and/or M.D. Please submit your curriculum vitae, reprints and names of three references to: **Dr. John Schuetz, St. Jude Children's Research Hospital, 332 N. Lauderdale, Memphis, TN 38105. E-mail: john.schuetz@stjude.org**

Equal Opportunity Employer

GLOBAL OPPORTUNITIES

DIRECTOR - INSTITUTE OF BIOMEDICAL SCIENCES
ACADEMIA SINICA, TAIPEI, TAIWAN

Academia Sinica, Taipei, Taiwan, ROC is seeking a distinguished biomedical scientist to serve as Director of the Institute of Biomedical Sciences (IBMS). IBMS does basic and applied research in human biology and medicine, especially, fundamental research and biotechnological developments in areas related to human physiological and pathological processes. The Institute is housed in a 363,000-sq. ft. building, with modern laboratories that are equipped with state-of-the-art instruments and facilities to support cutting-edge biomedical research. Currently, there are 46 principal investigators and a scientific staff of about 500 working in IBMS. IBMS is well supported by stable funding from the government and has an excellent potential for growth. Current basic research programs encompass cancer, cardiovascular, infectious diseases, neuroscience, structural biology, and epidemiology and public health. Clinical research is also carried out in collaboration with major medical centers in Taiwan. Requirements for the position include a doctoral degree (Ph.D., M.D., or equivalent); record of outstanding research accomplishments in the biomedical sciences; working experience as a full professor or equivalent for at least five years; evidence of administrative ability and leadership potential; and 62 years of age or younger. Nominations or applications should consist of a cover letter; a complete curriculum vitae including a list of publications and five representative reprints; as well as a list of five references, including names, postal and/or e-mail addresses, telephone and/or fax numbers, who are in the position to comment on the nominee or applicant's qualifications for the position. Nominations should have the consent of the nominee. Review of the applications and nominations will begin in March 2000, and continue until a suitable candidate is recruited. Nominations and applications should be sent by registered mail to Chairman of the Search Committee:

Ding-Shinn Chen, M.D.
Hepatitis Research Center
National Taiwan University Hospital
7 Chung-Shan South Road
Taipei 100, Taiwan
FAX: 886-2-2331-7624
E-mail: dschen@ha.mc.ntu.edu.tw

APPLIED CLINICAL COMMUNICATIONS DIVISION OF UNITEDHEALTH GROUP

Premier medical education company located in northern New Jersey offers immediate and future entry-level to management-level opportunities. We provide the highest quality scientific and clinical marketing communications supporting the pharmaceutical industry. Performance-based growth and competitive compensation and benefits package offered. Therapeutic experience in diabetes, cardiovascular diseases, endocrinology, CNS, oncology, HIV, or urology preferred. Must possess M.S., R.Ph., Pharm.D., M.D., or B.S. with equivalent experience. Relocation fees not allocated.

MEDICAL ASSOCIATE ASSISTANT MEDICAL DIRECTOR/ MEDICAL DIRECTOR

Responsibilities include developing, assessing, verifying, and assuring scientific and clinical content of various communication projects (e.g., scientific symposia, slide kits, monographs, and manuscripts for publication) pertaining to pharmaceutical products. Seeking detail-oriented professionals with strong business, communication, and leadership skills and ability to work in team environment.

FREELANCE MEDICAL WRITER

Experience in preparation of manuscripts or other educational materials essential. Ability to interpret and apply preclinical and clinical data required. Please include writing samples.

Submit résumé or curriculum vitae with salary requirements to: **Applied Clinical Communications, Human Resources, 1160 Parsippany Boulevard, Parsippany, NJ 07054. FAX: 973-316-0900.** *Equal Opportunity Employer. Minorities/Females/Disabled/Veterans.*

FACULTY POSITION IN MEDICAL IMAGING SYSTEMS
Department of Electrical Engineering
Stanford University

The Stanford University Department of Electrical Engineering (**website: http://ee.stanford.edu**) seeks candidates for a tenure-track faculty position at the **ASSISTANT PROFESSOR** level in the area of medical imaging systems. The successful applicant will possess broad talents in both the theoretical fundamentals and modern applications of medical imaging systems. Potential areas of specialization include but are not limited to systems design and analysis, signal and imaging processing, and instrumentation design. The successful candidate will have an earned Doctorate and be expected to have a strong commitment to build and maintain high-quality research and teaching programs. This person will be expected to initiate and conduct individual as well as interdisciplinary collaborative research. Specific teaching responsibilities will include a graduate class on medical imaging systems and an undergraduate class on signal processing. Applications should include a résumé with a publication list (and academic transcripts for recent graduates), a brief research and teaching plan, and the names and addresses of at least five references; they should be sent to: **Professor Dwight Nishimura, Search Committee Chair, Department of Electrical Engineering, Packard 255, Stanford University, Stanford, CA 94305-9510.** Applications should be received no later than March 31, 2000. *Stanford University is an Equal Opportunity Employer and encourages applications from women and minority group members.*

BIOLOGY: ASSISTANT PROFESSOR, TENURE TRACK: August 2000. Required: Ph.D. and strong animal development background that involves molecular genetics. Teach and coordinate lecture and laboratory sections of lower-division major courses, teach animal development, and direct undergraduate research. Screening begins February 1, 2000, and continues until position is filled. Obtain application information at: **website: http://www.science.lander.edu/jobs.html**. *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

Agricultural Research Service

PLANT PATHOLOGIST/MICROBIOLOGIST.

The United States Department of Agriculture (USDA), Agricultural Research Service (ARS), Biocontrol of Plant Diseases Laboratory in Beltsville, Maryland, is seeking applications for a Microbiologist/Research Plant Pathologist (GS-403/434-11/12). Salary is commensurate with experience (GS-11: $42,724 to $55,541; GS-12: $51,204 to $66,564 per annum) plus benefits. *Candidates must be U.S. citizens.* The incumbent will serve as a Research Scientist in the Biocontrol of Plant Diseases Laboratory, USDA, ARS, Beltsville, Maryland, and will be responsible for: (1) adapting biochemical, genetic, molecular, and general microbiological approaches to identify ecological factors that influence the persistence and fate of biocontrol agents in the environment; (2) devising biochemical and genetic methods for tagging and environmental monitoring of biocontrol fungi; (3) using molecular approaches, develop an understanding of the genetic stability of fungal biocontrol agents and their potential for change once released into the environment; and (4) developing methods to establish genetic characteristics and specific genes necessary for biocontrol to occur.

Candidates must request a copy of the vacancy announcement (ARS-X0E-0117) by either calling **Telephone: 301-504-1484** or by copying the full-text announcement from the ARS home page at **website: www.ars.usda.gov**. Candidates must submit specific information as outlined in the vacancy announcement. Applications must be postmarked by the closing date of March 6, 2000. *USDA is an Equal Opportunity Provider and Employer.*

ASSOCIATE RESEARCH SCIENTIST

Research-track position available immediately to join a rapidly expanding interdisciplinary group in the Microarray Section of the Keck Biotechnology Resource Laboratory, Yale University. Applicants should have a Ph.D. in biology or a related science, with at least two years of postdoctoral experience in molecular biology. Experience with DNA microarrays is required, and an understanding of programming methods (Perl, Java, C) is desired. The successful candidate will employ and refine a variety of molecular biology and gene expression analysis techniques, using state-of-the-art equipment to advance microarray research at Yale. Although there will be opportunities for collaborative interactions, the candidate's primary responsibility will be to help implement, improve, and provide noncollaborative services to large numbers of users involved in a wide spectrum of challenging projects. Additional information is available at **website: http://info.med.yale.edu/wmkeck/dna_arrays.htm**. Send curriculum vitae to: **Dr. Janet Hager** (preferably as an **e-mail** attachment to: **janet.hager@yale.edu**), **W. M. Keck Biotechnology Resource Laboratory, Yale University, Boyer Center for Molecular Medicine, 295 Congress Avenue, New Haven, CT 06520.** *Yale University is an Equal Opportunity Employer.*

TWO PH.D. FELLOWSHIPS in food science. The University of Nebraska is seeking outstanding Ph.D. students interested in comparative genome analysis and signal transduction in foodborne pathogens or epitope mapping of food allergens. Fellows will earn Ph.D. degrees in the Department of Food Science and Technology. The Food Science Complex is equipped with state-of-the-art genomics and molecular biology instrumentation and bioinformatics software. Stipends for Fellows are $22,000 per year and include tuition remission. *Candidates must be U.S. citizens* and have a B.S. degree (M.S. preferred) in microbiology, immunology, or a related field. Experience in molecular biology is required. For an application package or for more information, contact: **Andy Benson; Telephone: 402-472-5637; e-mail: abenson@foodsci.unl.edu**; or **Bob Hutkins; Telephone: 402-472-2820; e-mail: bhutkins@foodsci.unl.edu.**

POSITIONS OPEN

NIH-funded **POSTDOCTORAL POSITIONS** available at the Center for Advanced Research in Biotechnology (CARB) for biochemists/molecular biologists with recent Ph.D.s to join multidisciplinary team investigating molecular basis of ligand recognition by antibodies, T cell receptors (TCRs), and natural killer (NK) cell receptors. Projects include: (1) study of antibody specificity by site-directed mutagenesis and phage display; (2) X-ray crystallographic and solution binding studies of recombinant TCRs, MHC molecules, and superantigens; and (3) structural and binding studies of NK cell receptors (*Science* **267:**1984, 1995; *Nature* **374:**739, 1995; *Nature* **384:**188, 1996; *J. Exp. Med.* **187:**823, 1998; *Biochemistry* **37:**7981, 1998; *Nature* **391:**502, 1998; *Immunity* **9:**807, 1998; *Immunity* **10:**473, 1999; *Annu. Rev. Immunol.* **17:**435, 1999; *Nature* **402:**623, 1999). Experience in heterologous protein expression in bacterial and/or eukaryotic cells or in BIAcore/sedimentation equilibrium/calorimetry is highly desirable. CARB is a joint research center of the National Institute of Standards and Technology and the University of Maryland. Excellent opportunities for collaborative studies with crystallographers and physical biochemists. Send curriculum vitae and names of three references to **e-mail: mariuzza@carb.nist.gov** or to: **Dr. Roy Mariuzza, CARB, 9600 Gudelsky Drive, Rockville, MD 20850.**

DIAZYME LABORATORIES POSITIONS AVAILABLE

Diazyme Laboratories is a newly formed biotechnology division of General Atomics, La Jolla, California. Diazyme is focused on the development of clinical diagnostic products using its proprietary platform technology to provide the health care industry with uniform testing products for a variety of diseases. We are currently seeking exceptionally talented individuals to join our exciting and dynamic Research Group.

RESEARCH SCIENTIST/MOLECULAR BIOLOGY/BIOCHEMISTRY JOB# 180-2002

Requires a motivated and creative Research Scientist who has hands-on experience in molecular biology/biochemistry. Candidate will perform state-of-the-art molecular biology and routine recombinant DNA techniques, have Ph.D. degree in molecular biology or biochemistry with two to four years of postdoctoral or industrial experience in gene cloning, expression, site-directed mutagenesis, vector selection and/or construction for fusion protein expression, protein purification, and enzyme assays. Candidate must also be familiar with genome analysis software (e.g., BLAST, FASTA).

RESEARCH SCIENTIST/ASSAY DEVELOPMENT/DIAGNOSTIC KIT JOB# 180-2003

Candidate should possess extensive biochemical, bioanalytic, and immunological expertise and has hands-on experience in ELISA or microplate-based assay development. Experience in diagnostic industry developing ELISA-based diagnostic kits is highly preferred. Candidate must have a Ph.D. degree in biochemistry/immunology or related fields with two to four years of postdoctoral or industrial experience in assay development for diagnostic kits. Management skills in supervising Research Associates are also required.

General Atomics offers competitive salary and benefits as well as a dynamic work environment. For consideration, please reference the specific job number and forward your résumé to: **General Atomics, Department 20-04, P.O. Box 85608, San Diego, CA 92186-5608. E-mail: GAJOBS@gat.com (ASCII text format only); FAX: 858-455-2232.** Please visit our **website: http://www.ga.com** for other job opportunities. **General Atomics' 24-hour job line at: 858-455-4545.** *Americans with Disabilities Act/Equal Opportunity Employer.*

Flow Cytometry Facility Head

An independent, organized individual is sought to manage the new NCI Flow Cytometry Core Facility. The core facility will contain a FACSVantage SE with TurboSort, and 2 FACSCalibur cytometers, and will be located in the newly renovated 6th floor of Bld 37 on the NIH Bethesda campus. Duties will include overseeing installation, optimization and routine operation and upgrading of the FACSVantage, as well as overseeing maintenance and use of the FACSCaliburs by individual researchers. The manager will assist with managing, storage and initial analysis of flow data. The facility manager will be responsible for flow cytometry training as well as assisting individual researchers with the design and analysis of flow cytometry experiments including but not limited to cell cycle analysis, apoptosis, immunophenotyping, identification of transfected cells, calcium studies and high speed sorting. The individual should be capable of setting up new flow techniques as required by individual investigators. This position will require interaction with individuals having variable background and training in flow cytometry. The successful applicant will have at least 3-5 years of experience as a FACS operator, including experience coordinating a multiuser facility, and a Ph.D. although exceptionally qualified candidates with other degrees will be considered. Excellent interpersonal skills are essential. Proficiency in Mac and other computer platforms is also required. Salary will start at $61,000-75,000/year, depending on experience and qualifications. Applicants should send curriculum vitae, bibliography, statement of career directions and three letters of reference to:

Ms. Christa Walters
37 Convent Drive, 3B25
National Cancer Institute
Bethesda, MD 20892

Applications should be postmarked by March 1, 2000.

NIH is an Equal Opportunity Employer

Staff Clinician

The Craniofacial and Skeletal Diseases Branch (formerly the Bone Research Branch) of the National Institute of Dental and Craniofacial Research, National Institutes of Health is seeking a Board Certified/Board Eligible Endocrinologist to become a member of a clinical team that is focused on skeletal dysplasias. The Branch has an active clinical program in the study and treatment of fibrous dysplasia of bone, and is currently developing additional protocols. The incumbent would be responsible for patient treatment and care, and in further developing clinical studies on skeletal disorders. More information about Branch basic and clinical activities may be obtained by visiting the Branch home page at: **http://csdb.nidcr.nih.gov/csdb/**.

Staff Clinicians are physicians or dentists who spend a majority of their time providing critical clinical services to the NIH but who do not have oversight of independent resources. The Staff Clinician is expected to spend the majority of his or her time in the provision of clinical services and the support of clinical research. The Staff Clinician is also expected to provide clinical leadership and the highest level of clinical care. Performance will be evaluated on the level and quality of the clinical activities. Staff Clinicians in general will not receive resources to conduct independent laboratory or clinical research.

A number of employment mechanisms are available. Salary is commensurate with qualifications and experience. Applicants may apply by submitting the following materials: a curriculum vitae with detailed description of clinical experience, bibliography, a brief statement of current clinical interests. Applicants should arrange for three letters of recommendation to be sent directly to Ms. Cohen. Further information about the position and qualification requirements may be obtained from:

Ms. Esther Cohen
Personnel Management Specialist
National Institute of Dental and Craniofacial Research
National Institutes of Health
31 Center Drive, MSC 2290
Building 31, Room 2C39
Bethesda, Maryland 20892-2900
(301) 496-6971

Application materials must be postmarked and sent to Ms. Cohen by the closing date of 2/28/2000. The opening date is 1/28/2000.

NIH is an EQUAL OPPORTUNITY EMPLOYER

Several post-doctoral training positions are available in Molecular Genetics and Immunology in the Genetic Diseases Research Branch of the **National Human Genome Research Institute**. These open positions have a range of starting dates from February 2000 to October 2000. Investigators with current openings include: **Leslie Biesecker, M.D.** whose laboratory performs basic and clinical research into the molecular etiology of birth defect syndromes. Current studies in the lab include positional cloning of disease genes, comparative genomic approaches to the study of overgrowth disorders, mouse model systems for analyzing developmental phenotypes, and basic studies of the cellular biology of normal and mutant genes in human development. **Pamela Schwartzberg, M.D., Ph.D.** whose laboratory studies signal transduction in cells of the immune and skeletal systems. Current projects in the laboratory include the generation and study of gene-targeted mice and cell lines with defects in signal transduction molecules expressed in T lymphocytes, with emphasis on Tec family kinases and related signaling molecules involved in T-lymphocyte development, T helper cell differentiation and function. Other areas of interest include studies on Src family kinases in bone development and bone cell function.

We encourage well qualified candidates to apply for these positions. Previous experience in molecular biology, immunology, cellular biology, or genetics is preferred. Selection for posts in the branch is expected to be highly competitive. The NIH is an equal opportunity institution and applications from women and members of minority groups are encouraged.

Please send a curriculum vitae, a letter describing your interest in training in one of these two labs at the Genome Institute, and the names of three persons who can be contacted for references. The application process is under way so interested candidates are urged to apply early. Send application to:

Valerie McDonald
National Human Genome Research Institute
Building 49, Room 4A83
Bethesda, MD 20892-4472

PHYSICIAN/SCIENTIST: Blood and Marrow Transplantation Program (BMT). The Department of Medicine, Section of Hematology/Oncology, at West Virginia University is seeking applications for a physician/scientist to join an established blood and marrow transplantation program. Applicants will be expected to develop an independent, extramurally funded research program in an area relevant to blood and marrow transplantation. Multiple opportunities exist for participation in collaborative research. A competitive start-up package, including laboratory space, equipment, and laboratory support will be provided. Current areas of research focus in the Blood and Marrow Transplantation Program include hematopoiesis and immunology. Appointment rank is open depending on qualifications of the candidate. An M.D. or M.D./Ph.D. degree is required. Board certification in internal medicine and certification/eligibility in hematology and/or oncology are required. The Health Sciences Center at West Virginia University has a full complement of academic programs in the clinical and basic sciences and offers the advantage of a university setting in an area with reasonable cost of living, high quality of life, and easy access to abundant outdoor activities. The campus is approximately 60 miles south of Pittsburgh. The BMT program is NMDP-certified and serves as the referral center for West Virginia and surrounding Appalachian highlands. Applications wil be reviewed until the position is filled. Applicants should send a letter of interest, including a statement of research interest; a copy of curriculum vitae; and a list of three individuals who can provide references to: **Solveig G. Ericson, M.D., Ph.D., Chair, Search Committee, West Virginia University, Department of Medicine, P.O. Box 9162, Morgantown, WV 26506**. *West Virginia University is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply. This is not a physician-shortage area.*

FACULTY POSITION
DEPARTMENT OF PHARMACEUTICAL SCIENCES
University of Southern California

The University of Southern California Department of Pharmaceutical Sciences invites applications for a tenure-track **ASSISTANT/ASSOCIATE PROFESSOR** position. The successful candidate is expected to develop an outstanding independent research program to complement the Department's existing strengths in modern drug delivery and targeting that draws upon expertise in epithelial cell biology, membrane trafficking, molecular modeling, molecular pharmacology, and pharmacokinetics. Applicants conducting research on transport processes at the cellular or molecular level will be given the highest consideration. A competitive start-up package and salary commensurate with experience are offered. This position also provides the opportunity for teaching at the graduate and professional levels in the School of Pharmacy.

Candidates should send the names of three references, a curriculum vitae, and a summary of research accomplishments and future goals to: **Sarah Hamm-Alvarez, Ph.D., Department of Pharmaceutical Sciences, School of Pharmacy, University of Southern California, 1985 Zonal Avenue, Los Angeles, CA 90089-9121. Website: http://www.usc.edu/hsc/pharmacy/pharmsci/**. Evaluation of applications will begin on March 1, 2000, and continue until the position is filled. *USC is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION is available to study structure/function of human factor VIII (antihemophilic factor) and its interactions with other blood clotting proteins. Candidates should have a strong background in protein biochemistry and molecular biology. Send curriculum vitae and contact information for three references to: **Dr. Philip J. Fay, Department of Biochemistry and Biophysics, P.O. Box 712, University of Rochester School of Medicine, Rochester, NY 14642. E-mail: Philip_Fay@urmc.rochester.edu.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

POSTDOCTORAL POSITIONS
BAYLOR COLLEGE OF MEDICINE

Positions available immediately to work in one or more laboratories involved with generation and characterization of genetically engineered mouse models for human breast cancer. Investigators at Baylor College of Medicine, including **Dr. Daniel Medina, Dr. Allan Bradley, Dr. Jeff Rosen, Dr. Larry Donehower, Dr. Craig Allred,** and **Dr. Marcelo Aldaz** (at the University of Texas M. D. Anderson Cancer Center) recently were awarded a grant titled "Mouse Models of Human Breast Cancer." This grant is from the National Cancer Institute. The goal of this program is to develop mouse models that more closely mimic human breast cancer. This will be accomplished by introducing multiple mutations resulting in either gene activation or deletion somatically into a subset of mammary epithelial cells, using targeted Cre-expressing mice. Candidates should have a strong background in molecular and cell biology. Prior experience working with transgenic and knockout mouse models is also helpful. Baylor College of Medicine and the Texas Medical Center provide an outstanding training environment for both basic and clinical aspects of breast cancer. Please send your résumé and names/addresses of three references to: **Larry Donehower, Ph.D., Department of Molecular Virology and Microbiology, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030. E-mail: larryd@bcm.tmc.edu.**

POSTDOCTORAL POSITION
G PROTEIN STRUCTURE AND FUNCTION

Available spring/summer; positions to study heterotrimeric G proteins using biochemical, biophysical, and molecular biology techniques. Projects focus on (1) defining the mechanisms and function of the processing of G protein subunits, and (2) defining the mechanisms of signal integration through heterotrimeric G proteins. Applicants should have a strong background in biochemistry, cell biology, and/or molecular biology. Send curriculum vitae; a statement of research experience and career goals; and the names, addresses, and telephone numbers of three references to: **Dr. John Hildebrandt, Department of Cell and Molecular Pharmacology and Experimental Therapeutics, Medical University of South Carolina, Room 303 BSB, 173 Ashley Avenue, Charleston, SC 29425.**

FIVE RESEARCH ASSOCIATES
CLARK ATLANTA UNIVERSITY

A Ph.D. degree in biology/chemistry or a related field. The Research Center for Minority Institutions (RCMI)/CCRTD at Clark Atlanta University seeks five research associates in the areas of biochemistry/molecular biology, cell culture, immunochemistry, phage display, signal transduction, and polymeric biomaterials. Applicants for the biomaterials position should have acquired knowledge in: NMR, IR, spectrophotometry, CD spectroscopy and polarimetry, DSC, DMTA, Instron, and Transmission Electron Microscopy (TEM). Send a current curriculum vitae to: **Dr. Juarine Stewart, Director, RCMI/CCRTD Program, Clark Atlanta University, James P. Brawley Drive and Fair Street, S.W., Atlanta, GA 30314.**

POSTDOCTORAL POSITION available to study tumor angiogenesis-related genes. Needs molecular biology experience. Please send curriculum vitae and references to: **Dr. Mai Nguyen, UCLA, Box 951782, Los Angeles, CA 90095; FAX: 310-825-7575; e-mail: Mainguyen@mednet.ucla.edu.**

Engineering and Public Policy at Carnegie Mellon seeks **DOCTORAL STUDENTS** with technical backgrounds to address policy issues in energy and environmental systems; information technology; policy risk analysis and communication; research and development, innovation, and development. See **website: http://www.epp.cmu.edu**. Contact: **Victoria Massimino, Engineering and Public Policy, Carnegie Mellon, Pittsburgh, PA 15213 U.S.A.**

POSITIONS OPEN

POSTDOCTORAL POSITION/LECTURER

Position available immediately for an individual interested in a career at a predominantly undergraduate institution. Applicant's research responsibilities include using biochemical and biophysical techniques to investigate structure-function relationships in the recombination protein RecA. **Website: http://www.jmu.edu/chemistry/macdonald.htm**. Applicants interested in gaining teaching experience will be encouraged to participate in biochemistry or general chemistry lectures and laboratories. Ph.D. in related field required and experience with biochemical and spectroscopic techniques preferred. Applicants should send curriculum vitae, brief description of career goals, and the names of three references to: **Gina MacDonald, James Madison University, Department of Chemistry, Harrisonburg, VA 22807. E-mail: handalgm@jmu.edu**. Review of candidates will begin March 1, 2000. *James Madison University is an Equal Opportunity Employer/Affirmative Action/Equal Access Employer and especially encourages applications from minorities, women, and persons with disabilities.*

POSTDOCTORAL POSITIONS AT EPA

Two projects are available at the National Center for Environmental Assessment in Cincinnati. One project is on "Integrating Ecological Risk Assessment and Economics to Improve Ecosystem Management"; a background in social science (e.g., resource economics, geography, or natural resource management) with interests in the environment and ecology is required. The other project is on "Dose- or Concentration-Response Assessment of Dioxins in Aquatic and Aquatic-Associated Wildlife for Ecological Risk Assessment"; a background in biostatistics and modeling is required. A Doctoral degree within the last three years and *U.S. citizenship or PRA status are preferred*. For additional information (reference NCEA projects), contact: **Pat Pressley, Postdoctoral Research Program/NCEA, SEED-Energy–MS 36, Oak Ridge Institute for Science and Education, P.O. Box 117, Oak Ridge, TN 37831-0117. E-mail: presslep@orau.gov; FAX: 423-241-5219; Telephone: 423-576-5654.**

The University of Pittsburgh has an opening for a **POSTDOCTORAL FELLOW** to work on BK and JC polyoma virus gene expression in the kidney and to elucidate the role of IL-6 and hepatocellular growth factor in renal regeneration. The position is ideal for a recent Ph.D. or M.D. seeking to build an academic career in a promising new area of biomedical investigation. Experience in tissue culture and molecular biology techniques is required. Salary is commensurate with training. Send curriculum vitae, preferably by e-mail, to: **Dr. P. S. Randhawa, C 903.1 PUH, UPMC–Presbyterian, 200 Lothrop Street, Pittsburgh, PA 15213. Telephone: 412-647-7646; e-mail: randhawapa@msx.upmc.edu.**

POSTDOCTORAL POSITION available to study behavioral, biochemical, and immediate early gene responses to drugs of abuse in food-restricted and diabetic rats. Opportunities to collaborate with other Postdoctorates and faculty in a multidisciplinary drug abuse group. *Applicant must be U.S. citizen or permanent resident.* Send curriculum vitae and names of three references to: **Dr. Kenneth Carr, Millhauser Laboratories, Department of Psychiatry, New York University School of Medicine, 550 First Avenue, New York, NY 10016. E-mail: kc16@is4.nyu.edu**. *Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS in prostate cancer research. We seek candidates with expertise in molecular biology, protein biochemistry, and/or transgenic animal work. Please send résumé and names of three references to: **Shuk-Mei Ho, Ph.D., University of Massachusetts Medical School, 55 Lake Avenue North, S4-746 Worcester, MA 01655. E-mail: Shuk-mei.ho@umassmed.edu.**

POSTDOCTORAL FELLOWSHIPS. The Monell Chemical Senses Center announces the availability of Postdoctoral Fellowships in interdisciplinary training and research in the chemical senses. We are seeking applicants with a recent Ph.D. in any of the following disciplines: animal behavior, biochemistry, biology, chemistry, ecology, epidemiology, genetics, neuroscience, nutrition, physiology, psychology, sociology, or zoology. Research activities at the Center range from studies on receptor and central nervous system mechanisms of taste, smell, and chemical irritation at the subcellular, cellular, and organ level (including molecular genetics) to investigations on the ecological, social, and reproductive significance of chemical senses stimuli. The Center maintains a major Chemosensory Clinical Research Center with Jefferson Medical College of Thomas Jefferson University. Individuals having interests in conducting clinical and/or biomedical research on taste, smell, nutrition, or related areas also are encouraged to apply. Stipend is equivalent to NIH/NRSA levels. *Appointment to a position on the Center's NIH-sponsored training grant requires U.S. citizenship or permanent resident alien status.* Please send a brief description of previous research interests, curriculum vitae, and the names of three individuals willing to provide references to: **Personnel Officer, Monell Chemical Senses Center, 3500 Market Street, Philadelphia, PA 19104-3308**. *The Monell Center is an Equal Opportunity Employer and encourages applications by women and minorities.*

POSTDOCTORAL POSITIONS IN OLFACTION

Two positions are available immediately. One is to investigate cellular mechanisms of olfactory signal transduction, using combined patch clamp, molecular, and imaging approaches. Initial emphasis will be on ion channel regulation by phosphoinositide-mediated signaling in olfactory receptor cells (*J. Neurosci.* **19**:2929–2937, 1999). Experience in electrophysiology is preferred. The other is to investigate olfactory information processing, using combined patch clamp and imaging approaches. Initial emphasis will be on characterizing functionally distinct regions within individual olfactory glomeruli (**Wachowiak et al.,** *Exp. Biol.* **200**:989–1001, 1997). Experience in optical imaging is preferred. Please send curriculum vitae and names of three references or request for more information to: **Dr. Barry W. Ache, Whitney Laboratory and Center for Smell and Taste, Box 100015, University of Florida, Gainesville, FL 32610. E-mail: bwa@whitney.ufl.edu**. *The University of Florida is an Equal Opportunity Employer.*

STAFF SCIENTIST AND RESEARCH ASSOCIATE (POSTDOCTORAL) POSITIONS

To design and perform studies to improve gene transfer into hematopoietic cells and develop strategies to improve the survival of gene-modified cells in animal models. Requires a Ph.D. or M.D./Ph.D. in related field, experience with retroviral gene transfer, molecular biology, immunologic assays, and flow cytometry. Requires flexibility and ability to be an effective part of a team; will need to work independently and be a good communicator. Indicate Code # 10091 on cover letter and send with curriculum vitae to: **Fred Hutchinson Cancer Research Center, Human Resources, 1300 Valley Street, Seattle, WA 98109. FAX: 206-667-4051; e-mail: jobresponses@fhcrc.org**. *Fred Hutchinson Cancer Research Center is an Equal Opportunity Employer.*

Two **POSTDOCTORAL POSITIONS** available immediately at the Andrus Gerontology Center at the University of Southern California to study the role of oxidative stress and apoptosis in neurodegenerative disease in transgenic models. Experience with both molecular biology and biochemistry preferred. Please send curriculum vitae and names of three references to: **Dr. Julie K. Andersen, Andrus Gerontology Center, University of Southern California, 3715 McClintock Avenue, Los Angeles, CA 90089-0191. E-mail: andersen@almaak.usc.edu.**

POSITIONS OPEN

POSTDOCTORAL POSITION IN BIOCHEMISTRY AND MOLECULAR BIOLOGY

A Postdoctoral position is available immediately in the laboratory of **Dr. Saibal Dey** at the Uniformed Services University of the Health Sciences to study the molecular mechanism of ATP-dependent drug transport by human multidrug transporter P-glycoprotein. Studies will be directed towards understanding the catalytic cycle of the drug transporter (**Dey et al.,** *Proc. Natl. Acad. Sci.* **94**:10594–10599, 1997) and characterizing its functional modulation by therapeutic agents through a recently identified allosteric site within the protein (**Dey et al.,** *Biochemistry* **38**:6630–6639, 1999). Interested individuals with a Ph.D. in biochemistry and molecular biology or in any related area should send their curriculum vitae and names of three references by 4 February 2000 to:

Dr. Saibal Dey
Assistant Professor
Department of Biochemistry and Molecular Biology
Uniformed Services University of Health Sciences
4301 Jones Bridge Road
Bethesda, MD 20814-4799
Telephone: 301-295-5822
FAX: 301-295-3512
E-mail: sdey@usuhs.mil

USUHS is an Equal Opportunity/Affirmative Action Employer.

PROJECT SEAHORSE

Three-year **POSTDOCTORAL RESEARCH FELLOWSHIP** in behavioural ecology and conservation of Australian seahorses and pipefishes. The ideal candidate will exhibit strong research skills, an evident capacity to work in the policy arena, and considerable flexibility and mobility. The post is based at McGill University, Montreal, Canada, with extended field seasons in Australia. It is sponsored by Guylian Chocolates Belgium.

Project Seahorse is an international marine conservation programme with biologists and social workers based in eight countries (**website: www.seahorse.mcgill.ca**). Post to be filled immediately; Ph.D. must be submitted by 1 April 2000. Please send covering letter, curriculum vitae, three letters of reference, and two examples of written work to: **Jacqueline Blomfield, Department of Biology, 1205 Avenue Dr. Penfield, Montreal, Quebec H3A 1B1 Canada. FAX: 1-514-398-5069**. No **e-mail** applications. Deadline: 1 March 2000.

RESEARCH (POSTDOCTORAL/ASSOCIATE) POSITION available immediately to study intercellular signaling in cardiac tissue cultures. This work is a part of a multicenter (Drexel/Penn/Harvard) research initiative to develop live-cell imaging system and to study cellular network spatiotemporal organization. Applicant must have a strong background and experience in cellular biology and/or biophysics. Curriculum vitae and three references should be sent to:

Dr. J. Yasha Kresh, Resident Director
Cardiac Surgery/Medicine
Medical College of Penn–HU
245 North 15th Street, MS 111
Philadelphia, PA 19102-1192
E-mail: j.yasha.kresh@drexel.edu

POSTDOCTORAL/INSTRUCTOR POSITIONS available: cell and molecular biology of colon cancer: lineage-specific differentiation, cell-cycle regulation, apoptosis, and alterations in initiation and progression of colon cancer. Studies encompass cell culture, unique mouse genetic models, and human populations. Application of state-of-the-art screening and imaging technologies for analysis of gene expression. Submit curriculum vitae and names of references to: **Leonard Augenlicht, Director, Molecular Oncology, Albert Einstein Cancer Center, 111 East 210th Street, Bronx, NY 10467.**

POSITIONS OPEN

POSTDOCTORAL RESEARCH POSITION

Applications are invited to fill a Postdoctoral position at the University of North Carolina Lineberger Comprehensive Cancer Center to study the role of ARF (alternate reading frame product of the p16INK4a locus) in cell cycle regulation and apoptosis. Preclinical studies will involve the use of patient material and animal models and will be designed to determine the potential role of ARF in cancer therapy. Basic studies will be designed to determine the molecular mechanism of ARF activity. Candidates must have a M.D. or Ph.D. degree, documented skills in molecular biological techniques, and proficiency in both written and spoken English. Researcher will join the laboratory of **Wendell G. Yarbrough, M.D.,** and will work closely with members of his laboratory, as well as **Dr. Yue Xiong** and members of his laboratory. Curriculum vitae and three references should be forwarded to:

Wendell G. Yarbrough, M.D.
University of North Carolina at Chapel Hill
Lineberger Comprehensive Cancer Center
CB#7600
Chapel Hill, NC 27599
E-mail: wgy@mcd.unc.edu

POSTDOCTORAL POSITION in plant ecology and/or plant-animal interactions to participate in a National Science Foundation-funded study of oak dispersal by food hoarders. Starting date negotiable. We seek candidates with experience in one or more of the following: plant population ecology/genetics, seed dispersal, plant physiology/ecology, or spatial analyses. This research position is renewable annually for up to four years and will include directing undergraduates. Opportunities also are available for teaching in a small university setting if desired. Send curriculum vitae, statement of research experience, and names of three references to: **Dr. M. A. Steele, Department of Biology, Wilkes University, Wilkes-Barre, PA 18766. E-mail: msteele@wilkes.edu**. *Wilkes University is an Equal Opportunity Employer.*

POSTDOCTORAL POSITION HOLLAND LABORATORY IMMUNOLOGY DEPARTMENT

POSTDOCTORAL FELLOW will study the molecular mechanism of T cell development. This position requires a Ph.D. or M.D. degree and experience in molecular and/or cellular biology. Please send curriculum vitae and the names of three references to: **Dr. Lisa Spain, c/o American Red Cross, Holland Laboratory, 15601 Crabbs Branch Way, Rockville, MD 20855. E-mail: SpainL@usa.redcross.org**. The Holland Laboratory is the research and development division of the American Red Cross located in Rockville, Maryland, 10 miles north of the NIH in suburban Washington, D.C., and is affiliated with George Washington University Medical School. *Equal Opportunity Employer; Minorities/Females/Disabled/Veterans.*

POSTDOCTORAL POSITIONS available to study gene regulation in development, using transgenic and mutant mice. Emphasis is on growth defects in the skeleton and nervous system. Please send curriculum vitae and names of three references to: **Dr. Claudia Kappen, Associate Professor, Center for Human Molecular Genetics, Munroe-Meyer Institute, 985455 Nebraska Medical Center, Omaha, NE 68198-5455. E-mail: ckappen@unmc.edu**. *The University of Nebraska Medical Center is an Equal Opportunity/Affirmative Action Employer. Women, minorities, and persons with disabilities are encouraged to apply.*

POSTDOCTORAL POSITION in molecular and cellular biology available. Our laboratory is investigating molecular signaling mechanisms responsible for potentiation of the programmed cell death effects of chemotherapy agents by retinoic acid in cancer cells. Send curriculum vitae to: **Robert Wieder, M.D., Ph.D., Division of Medical Oncology/Hematology, UMDNJ–New Jersey Medical School, MSB I–594, 185 South Orange Avenue, Newark, NJ 07103. FAX: 973-972-2384; e-mail: wiederro@umdnj.edu.**

GLOBAL OPPORTUNITIES

POSITIONS OPEN

MASSACHUSETTS GENERAL HOSPITAL HARVARD MEDICAL SCHOOL

POSTDOCTORAL POSITION is available in *Drosophila* developmental genetics. My laboratory is interested in investigating mechanisms that regulate the proliferation and differentiation of blood cells and in developing new techniques for the generation of mutant fly stocks. Please send a curriculum vitae, three letters of recommendation, and a one-page summary of future research plans to: **Dr. Charles Dearolf, Massachusetts General Hospital, Jackson 1402, 55 Fruit Street, Boston, MA 02114. E-mail: cdearolf@partners.org.**

POSTDOCTORAL POSITION is available immediately to study molecular immunology and tumor immunology. Research is focused on Fas ligand, cancer gene therapy, and immunotherapy (see our paper: *Science* **282:**1714–1717, 1998). Applicants must have a strong background in cellular immunology and molecular biology. Please send curriculum vitae, cover letter, and names of three references (with telephone numbers and/or e-mail addresses) to: **Jian-Jun Chen, M.D., Ph.D., 7220D MSRB III, 1150 West Medical Center Drive, Department of Medicine, University of Michigan, Ann Arbor, MI 48109-0644.**

POSTDOCTORAL POSITIONS for NIH-funded studies of transcriptional regulation of blood coagulation and vitamin K-dependent proteins in development, using biochemical and transgenic approaches. Ph.D.s or M.D.s with a strong background in molecular biology required. Send curriculum vitae and names of three references to: **Dr. David A. Roth, Harvard Medical School, Center for Hemostasis and Thrombosis Research at Beth Israel Deaconess Medical Center, 41 Avenue Louis Pasteur, RE-302, Boston, MA 02115. FAX: 617-667-2355; e-mail: droth@caregroup.harvard.edu.**

NIH research grant-funded **POSTDOCTORAL POSITIONS** are available for two projects on the biology of human Fc receptors for IgG (FcR), one project concerning the mechanism of signal transduction by members of the family of classical FcR and the other focusing on the mechanism by which FcRn transports IgG and prolongs the life span of IgG. Consult investigator's **website: http://www.biosci.ohio-state.edu/~canderso/**. Send a letter of intent, a curriculum vitae, and the names and telephone numbers of three references to: **Clark L. Anderson, M.D.; e-mail: anderson.48@osu.edu.**

POSTDOCTORAL POSITIONS available immediately to study membrane physiology of gastrointestinal epithelia with confocal and multiphoton microscopy (see **website: http://www.iupui.edu/~medphys/montrose**), using mutant animals and cells. Experience with fluorescence or microscopy methods desirable; documented molecular biology experience required. Send curriculum vitae with names of three references to: **Marshall Montrose; FAX: 317-278-3840** or **e-mail: mmontros@iupui.edu.**

POSTDOCTORAL FELLOW wanted for research in breast cancer. Stably funded laboratory has an emphasis on novel effects of estrogen and angiogenesis. Sophisticated cellular or molecular skills required, and position could lead to independent funding. Good salary commensurate with experience. Provide a letter and curriculum vitae to: **Dr. Ellis Levin, Professor and Vice Chairman, Medicine, University of California–Irvine,** by **e-mail: ellis.levin@med.va.gov. Telephone: 562-494-5748.**

POSTDOCTORAL FELLOWSHIPS in the San Francisco Bay area for research in cystic fibrosis. Seventeen faculty from the Berkeley, San Francisco, and Davis campuses of the University of California and Stanford University, Children's Hospital Oakland, and Genentech Inc. For details, see **website: www.cfri.org**. To apply, please send curriculum vitae and names of three references to: **Cystic Fibrosis Research Inc., 560 San Antonio Road, Palo Alto, CA 94306.**

POSITIONS OPEN

POSTDOCTORAL POSITIONS SEALY CENTER FOR CANCER CELL BIOLOGY
University of Texas Medical Branch

Postdoctoral positions available immediately to join NIH-funded studies on the role of protein kinase C isozymes in colonic epithelial cell biology and colon carcinogenesis using transgenic mouse models (see *J. Cell Biol.* **145:**699–711, 1999). Experience with molecular biology required. Experience in immunohistochemistry, nutritional biochemistry, and/or carcinogenesis studies is desirable. Interested candidates should send a curriculum vitae, names of three references, and a statement of research experience to: **Alan P. Fields, Ph.D., Director, Sealy Center for Cancer Cell Biology, University of Texas Medical Branch, 300 University Boulevard, Galveston, TX 77555-1048. E-mail: afields@utmb.edu**.

University of Texas Medical Branch is an Equal Opportunity/Affirmative Action Employer; Minorities/Females/Disabled/Veterans. University of Texas Medical Branch is a smoke-free/drug-free workplace and hires only individuals authorized to work in the United States.

NEUROBIOLOGY RESEARCH-TRACK AND POSTDOCTORAL POSITIONS

Available immediately for: (1) an integrative and/or cellular neurophysiologist to study synaptic integration and sensory processing in mammalian olfactory bulb and piriform cortex; experience in optical imaging of voltage-sensitive dyes and/or patch clamping in slices required. (2) A neuroanatomist with expertise in *in situ* hybridization (immunocytochemistry/tract-tracing skills desirable) to investigate neural circuits underlying taste analgesia. Applicants must have a Ph.D. or M.D. Competitive salary and fringe benefits. Opportunity to interact with neuroscientists in the department (**website: http://neurobiology.umaryland.edu**) and the Neuroscience Program (**website: http://neuroscience.umaryland.edu/**). Send curriculum vitae and names of three references to: **Dr. M. Ennis, Department of Anatomy and Neurobiology, University of Maryland School of Medicine, 685 West Baltimore Street, Baltimore, MD 21201. E-mail: mennis@umaryland.edu**. *University of Maryland is an Affirmative Action/Equal Employment Opportunity/Americans with Disabilities Act Employer.*

POSTDOCTORAL FELLOW POSITION REACTIVE OXYGEN SIGNALING

Available immediately to study enzyme systems which generate reactive oxygen and the role of reactive oxygen as a signal molecule related to cell growth and tumorigenesis. Preference given to candidates with experience in mouse genetics, molecular biology, and/or biochemistry. Send curriculum vitae, a brief overview of prior experience and interests, and names of three references to: **Dr. David Lambeth, Emory University School of Medicine, 1510 Clifton Road #4001, Atlanta, GA 30322. E-mail: dlambe@bimcore.emory.edu**. For further information about the laboratory, see **website: http://www.biochem.emory.edu/Lambeth/entiredir.html**. *Emory University is an Equal Employment Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY

Postdoctoral position is available to M.D./Ph.D. or equivalent with background in molecular virology. Our laboratory uses molecular techniques to study SIV pathogenesis and transmission in the macaque model of AIDS. Strong background in molecular biology and cell culture required. Preference will be given to applicants with previous postdoctoral experience. Please send curriculum vitae, including three references, to: **Dr. Stephen Smith, Department of Preventive Health and Community Medicine, University of Medicine and Dentistry of New Jersey, Saint Michael's Medical Center, 268 Dr. Martin Luther King Boulevard, Newark, NJ 07102.**

POSITIONS OPEN

TWO POSTDOCTORAL POSITIONS IN NEUROSCIENCE UNIVERSITY OF NORTH CAROLINA

Two NIH-funded Postdoctoral positions are available to study neuronal-glial interactions *in situ*. One position will use electrophysiology, confocal microscopy, caged compounds, and molecular methods to investigate glial-neuronal signaling within hippocampal brain slices. The second position will involve the generation and analysis of transgenic and conditional-knockout mice designed to perturb astrocytic-neuronal interactions. Applicants should have a strong background in either electrophysiology/imaging microscopy or molecular biology. Send curriculum vitae and names, telephone numbers, and e-mail addresses of three references to: **Ken McCarthy, Ph.D., Department of Pharmacology, CB# 7365, University of North Carolina–Chapel Hill, Chapel Hill, NC 27599-7365. FAX: 919-966-5640; e-mail: kdmc@med.unc.edu.**

POSTDOCTORAL RESEARCHER. An immediate opening exists for a Biopolymer Materials Chemist or a Structural Protein Biochemist at the Leather Research Institute. Four challenging projects in collagen network manipulation are available for a two-year study. Qualified applicants will hold a Ph.D. in chemistry, biochemistry, or biophysics and must be available by 1 April 2000. Send a curriculum vitae and two letters of recommendation by 1 March 2000 to: **Professor D. Shelly, Leather Research Institute, Box 41061, Texas Tech University, Lubbock, TX 79409-1061**. *Texas Tech is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION in molecular oncology to study the expression and function of paired-domain transcription factors in cancer. One area of interest is the deregulation of PAX3 and PAX7 function and expression as a result of cancer-associated chromosomal translocations. Experience in molecular biology is required. Send curriculum vitae and names of three references to: **Dr. Frederic G. Barr, Department of Pathology, University of Pennsylvania, 36th Street and Hamilton Walk, Philadelphia, PA 19104-6082. FAX: 215-898-4227; e-mail: barrfg@mail.med.upenn.edu**. *Equal Opportunity Employer/Affirmative Action.*

POSTDOCTORAL POSITIONS currently available for individuals interested in the design of novel transcription factors and DNA-modifying enzymes. New approaches towards regulation of angiogenesis and the correction of genetic diseases will be developed. See *PNAS* **95:**14628. Requires a Ph.D. with a background in molecular biology. Send curriculum vitae and three references to: **Professor C. F. Barbas, Department of Molecular Biology, BCC 515, The Scripps Research Institute, 10550 North Torrey Pines Road, La Jolla, CA 92037. FAX: 858-784-2583. E-mail: carlos@scripps.edu; website: http://www.scripps.edu/mb/barbas/index.html.**

POSTDOCTORAL POSITION available immediately to study mechanisms of xenobiotic-inducible/nuclear receptor-mediated gene expression in hepatocytes. Experience with cell culture and molecular techniques essential. Ph.D. in biological sciences or equivalent degree required. Send cover letter, curriculum vitae, and three references to the attention of: **Dr. Thomas A. Kocarek, Institute of Chemical Toxicology, Wayne State University, 2727 Second Avenue, Detroit, MI 48201. E-mail: t.kocarek@wayne.edu**. *Wayne State University is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available. Research includes the molecular analysis of the actions of vitamin A and retinoic acid in cancer and during embryonic development. Send curriculum vitae, names of three references, and a statement of research interests to: **Dr. Lorraine J. Gudas, Department of Pharmacology, Weill Medical College of Cornell University (formerly Cornell University Medical College), 1300 York Avenue, New York, NY 10021**. *An Equal Opportunity Employer/Affirmative Action/Minorities/Females/Disabled/Veterans.*

POSITIONS OPEN

POSTDOCTORAL POSITION

A Postdoctoral position is available immediately to develop gingipain-based vaccines for *Porphyromonas gingivalis* mediated periodontal disease. The *P. gingivalis* gingipains have been recognized as major virulence factors of this organism due to their ability to degrade and inactivate host defense proteins, structural proteins, and plasma protein inhibitors. The project involves the construction of avirulent *Salmonella typhimurium* strains expressing gingipains and the use of these constructs to stimulate mucosal and systemic immune responses and to protect against infection in a defined animal model. Candidates should be experienced in molecular biology, bacterial genetics, immunology, and basic animal techniques. Excellent oral and written communication skills, as well as computer proficiency, are required. The salary will be commensurate with experience, and the appointment is for two to three years. Send curriculum vitae with names of three references and relevant reprints to: **Dr. Caroline Genco, Department of Medicine, The Maxwell Finland Laboratory for Infectious Diseases, Boston University School of Medicine, 774 Albany Street, Boston, MA 02118. FAX: 617-414-5280; Telephone: 617-414-5305; e-mail: caroline.genco@bmc.org.**

NEUROSCIENCE CENTER UNIVERSITY OF NORTH CAROLINA

RESEARCH ASSISTANT/TECHNICIAN. We are seeking a highly skilled individual with a strong background in molecular biology to assist a team of neurobiologists working on growth factor regulation of axonal development and regeneration. Extensive cloning experience is essential. Salary and fringe benefits will be highly competitive. Chapel Hill is a lovely University town in the heart of the dynamic "research triangle" region of North Carolina. Please send a curriculum vitae and the names of three references to: **W. Snider, Director, University of North Carolina Neuroscience Center, CB 7250, School of Medicine, University of North Carolina–Chapel Hill, Chapel Hill, NC 27599. E-mail: wsnider@css.unc.edu.**

POSTDOCTORAL POSITION MOLECULAR NEUROSCIENCE UCLA School of Medicine

Postdoctoral position available immediately. Ongoing studies include molecular mechanisms in proliferation and migration of oligodendrocytes and the role OSP/caludin-11 plays in EAE and multiple sclerosis. Highly motivated individuals with a recent Ph.D. and substantial experience in molecular biology and neuroscience are encouraged to apply. Send letter of interest, curriculum vitae, and names of three references to: **Dr. Jeff Bronstein, UCLA School of Medicine, Department of Neurology, 710 Westwood Plaza, Los Angeles, CA 90095. E-mail: jbronste@ucla.edu.**

POSTDOCTORAL POSITION at the University of British Columbia is available starting March 1, 2000, to study the mechanism of activation of the *Bacillus subtilis* response regulator Spo0A, using a combination of *in vitro* and *in vivo* techniques (see *Mol. Microbiol.* **31**:597–607, 1999; *PNAS* **95**:5305–5310, 1998). Applicants must have demonstrated expertise in cloning. Apply with curriculum vitae and names of references to: **Dr. George B. Spiegelman, Department of Microbiology and Immunology, University of British Columbia, 6174 University Boulevard, Vancouver, British Columbia, Canada. E-mail: spie@interchange.ubc.ca.**

POSTDOCTORAL POSITION

Ns-ps-resolved spectrofluorometry, biophysical chemistry, protein conformational energy minimization, and reconstitution in liposomes. Curriculum vitae, publications, and two recommendations. Contact: **Professor Parola and Dr. Pines, Chemistry Department, Ben Gurion University, Beer Sheva, Israel. FAX: 97276472943; e-mail: aparola@bgumail.bgu.ac.il.**

POSITIONS OPEN

POSTDOCTORAL POSITION in microbial pathogenesis available to investigate heme acquisition systems used by *Haemophilus influenzae*. Emphasis will be placed on identification and characterization of *H. influenzae* outer membrane proteins, which interact directly with human heme carrier proteins and on *H. influenzae* gene products involved in the regulation of expression of these proteins. Experience with recombinant DNA techniques is required; this project makes extensive use of mutant analysis in conjunction with a relevant animal model. Position includes salary, fringe benefits, and the opportunity to work in a dynamic research environment. Position available after March 1, 2000. Send curriculum vitae and the names and telephone numbers of three references to: **Dr. Eric J. Hansen, Department of Microbiology, The University of Texas Southwestern Medical Center at Dallas, 5323 Harry Hines Boulevard, Dallas, TX 75235-9048. FAX: 214-648-5905; e-mail: hansen01@utsw.swmed.edu.** *University of Texas Southwestern is an Equal Opportunity/Affirmative Action Employer.*

RESEARCH ASSOCIATE/POSTDOCTORAL FELLOW POSITIONS available immediately to study the biochemical and genetic mechanisms of eye diseases (see **website: http://petrash-lab.wustl.edu**). Background in biochemistry is required; proficiency in molecular biology or yeast genetics is highly desirable. Please send a statement of research and career interests, curriculum vitae, and names of three references to: **J. Mark Petrash, Ph.D., Department of Ophthalmology and Visual Sciences, Washington University School of Medicine, 660 South Euclid Avenue (Campus Box 8096), St. Louis, MO 63110. E-mail: petrash@vision.wustl.edu.** *Washington University is an Equal Opportunity Employer.*

GRADUATE PROGRAMS

PH.D. PROGRAM IN MOLECULAR PHARMACOLOGY AT THE UNIVERSITY OF ILLINOIS

The Department of Pharmacology, College of Medicine, at the University of Illinois at Chicago is actively recruiting highly qualified Ph.D. students. The Department provides an intellectually stimulating environment for graduate training where emphasis is placed on laboratory research. Research training is available in areas of molecular pharmacology, functional genomics, cellular signaling, receptor biology, immunopharmacology, and vascular and thrombosis research. The Department also has an NIH-funded training program in lung biology and pathobiology. The program provides a competitive stipend and assistantship to qualified candidates. A complete description of the Department, including faculty research areas and application forms, can be found on **website: http://www.uic.edu/depts/mcph.**

EUROPEAN OPPORTUNITIES

POSTDOCTORAL POSITION (BAT IIa)

A senior Postdoctoral position is available for four years as head of the new sugar beet genomics group. Primary duties for this position include molecular marker analysis (AFLP, SSR, SNP) with automated band detection, linkage map construction, determining allelic variation on single nucleotide level and large-insert cloning (BACs). We are seeking a highly motivated scientist to join our team. Minimum requirements for this position are a Ph.D. in genetics/biology or agriculture with specialization in plant breeding. The successful candidate will have expertise and direct experience in basic molecular techniques and molecular marker technology. Please send a cover letter together with curriculum vitae, statement of research interest, and names of two references by February 20, 2000, to: **Professor Christian Jung, Institut fuer Pflanzenbau und Pflanzenzuechtung, Christian-Albrechts Universität Kiel, Olshausenstrasse 40, D-24098 Kiel, Germany. Telephone: (++) 431-880-2577; e-mail: cjung@plantbreeding.uni-kiel.de.**

POSITIONS OPEN

DAVID G. MARSH POSTDOCTORAL FELLOWSHIP IN MOLECULAR GENETICS OF ALLERGY AND ASTHMA

Available immediately for an individual with experience in genetic mapping, positional cloning, or gene regulation to join a team of established investigators at the Johns Hopkins Asthma and Allergy Center.

Submit applications, including a curriculum vitae, a summary of research goals, and a list of three references, to: **The Selection Committee, c/o skhuang@welch.jhu.edu. FAX: 410-550-2527.** *The Johns Hopkins University School of Medicine is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION is available immediately to study the regulation of antitumor immune responses at both the cellular and molecular level. A Ph.D. degree with experience in immunology and/or molecular biology is required. Please send curriculum vitae with names of three references to: **Dr. Margalit B. Mokyr, University of Illinois at Chicago, Department of Biochemistry and Molecular Biology, 1819 West Polk Street (M/C 536), Chicago, IL 60612; FAX: 312-413-0364.** *University of Illinois at Chicago is an Affirmative Action/Equal Opportunity Employer.*

COURSES & TRAINING

NEURAL DEVELOPMENT AND GENETICS OF ZEBRA FISH AUGUST 13–AUGUST 26, 2000

An intensive, two-week course for advanced graduate students, Postdoctoral Fellows, and independent investigators that will focus on the development and genetics of zebra fish with special emphasis on the nervous system. The first week of the course will cover the early development and genetics of zebra fish and the relevant methodologies. The second week will focus on the nervous system. Mornings will be devoted mainly to lectures and discussion and afternoons to three- to four-hour laboratory exercises. Limited to 16 students. Each day will be under the supervision of a senior faculty member who will be assisted by one or two more junior faculty members. Partial funding for this course is provided by the National Institutes of Health, the Grass Foundation, and the International Brain Research Organization. Visit **website: courses.mbl.edu** for more information. Directors: **John E. Dowling**, Harvard University; and **Nancy Hopkins**, Massachusetts Institute of Technology. Contact: **Carol Hamel, Admissions Coordinator, Marine Biological Laboratory, 7 MBL Street, Woods Hole, MA 02543. Telephone: 508-289-7401; e-mail: admissions@mbl.edu.** Application deadline: April 11, 2000. *The MBL is an Equal Employment Opportunity/Affirmative Action Institution.*

SHORT COURSE ON TIME-RESOLVED FLUORESCENCE SPECTROSCOPY. The Center for Fluorescence Spectroscopy at the University of Maryland School of Medicine is offering a Short Course on principles and applications of time-resolved fluorescence spectroscopy in Baltimore, March 20–24, 2000. The course will cover basic and advanced topics in fluorometry, including time and frequency-domain measurements; and Forster energy transfer. Advanced topics include chemical sensing, imaging, fiber optics, infrared fluorometry, two-photon excitation, instrumentation, confocal and multiphoton microscopy, protein fluorescence, DNA technology, high-throughput screening, metal-ligand probes, and immunoassays. Textbook, course materials, lunches, and refreshments will be provided. For further information, a schedule, and fees, please contact: **Ms. Mary Rosenfeld** or **Prof. J. R. Lakowicz, The Center for Fluorescence Spectroscopy, Department of Biochemistry and Molecular Biology, 725 West Lombard Street, Baltimore, MD 21201. Telephone: 410-706-8409; FAX: 410-706-8408; e-mail: cfs@cfs.umbi.umd.edu; website: http://cfs.umbi.umd.edu.** Deadline for enrollment is February 1, 2000, with later enrollment if space permits.

COURSES & TRAINING

BIOLOGY OF DISEASE VECTORS COURSE
17 JUNE–1 JULY, 2000
Colorado State University
Fort Collins, Colorado, U.S.A.

This course provides a perspective of vector biology and emphasizes modern molecular genetic and quantitative techniques. Subjects covered include: immunology, gene regulation, molecular systematics, genetic manipulation, blood-feeding, behavior, and population biology. The course is intended for advanced students (M.S., Ph.D.), Postdoctoral Fellows, and faculty. Enrollment is limited to 30 students. Financial aid may be provided based on need. For forms and information, contact our **website: www.jiggityjig.com/bdv2000/index.htm** or **Dr. Nancy DuTeau, Department of Microbiology, Colorado State University, Fort Collins, CO 80523-1677 U.S.A. Telephone: 970-491-8505; FAX: 970-491-1815; e-mail: nduteau@cvmbs.colostate.edu.** Application deadline is February 28, 2000. *Colorado State University is an Equal Opportunity/Affirmative Action Institution.*

ANNOUNCEMENTS

MEDICAL UNIVERSITY OF SOUTH CAROLINA offers programs leading to Ph.D. and M.D./Ph.D. degrees in each of the basic biomedical sciences (biochemistry, microbiology/immunology, pathology, pharmacology, physiology); biometry/epidemiology; pharmaceutical sciences; and molecular and cellular biology and pathobiology. Competitive stipends of $17,000 available. Contact: **College of Graduate Studies, Medical University of South Carolina, P.O. Box 250617, Charleston, SC 29425. Telephone (toll-free): 1-800-589-2003.**

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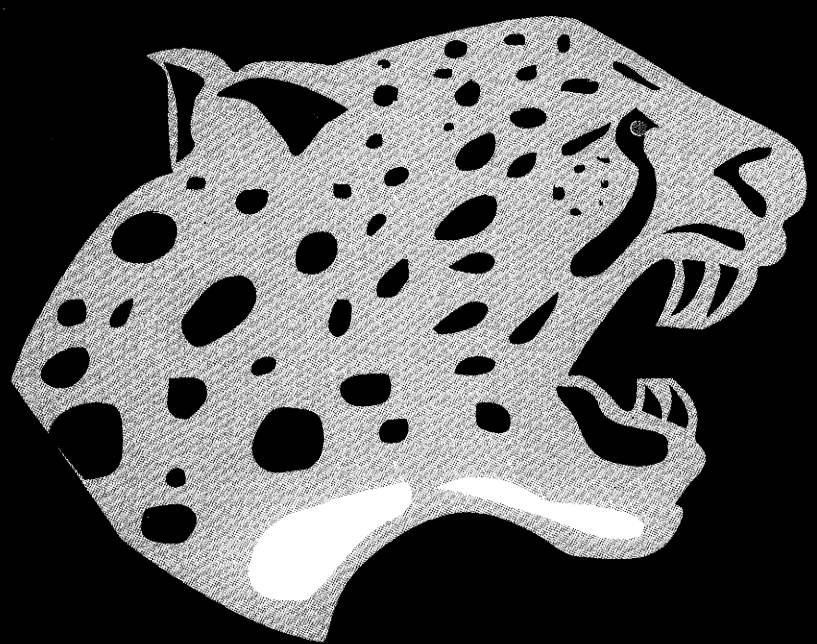

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