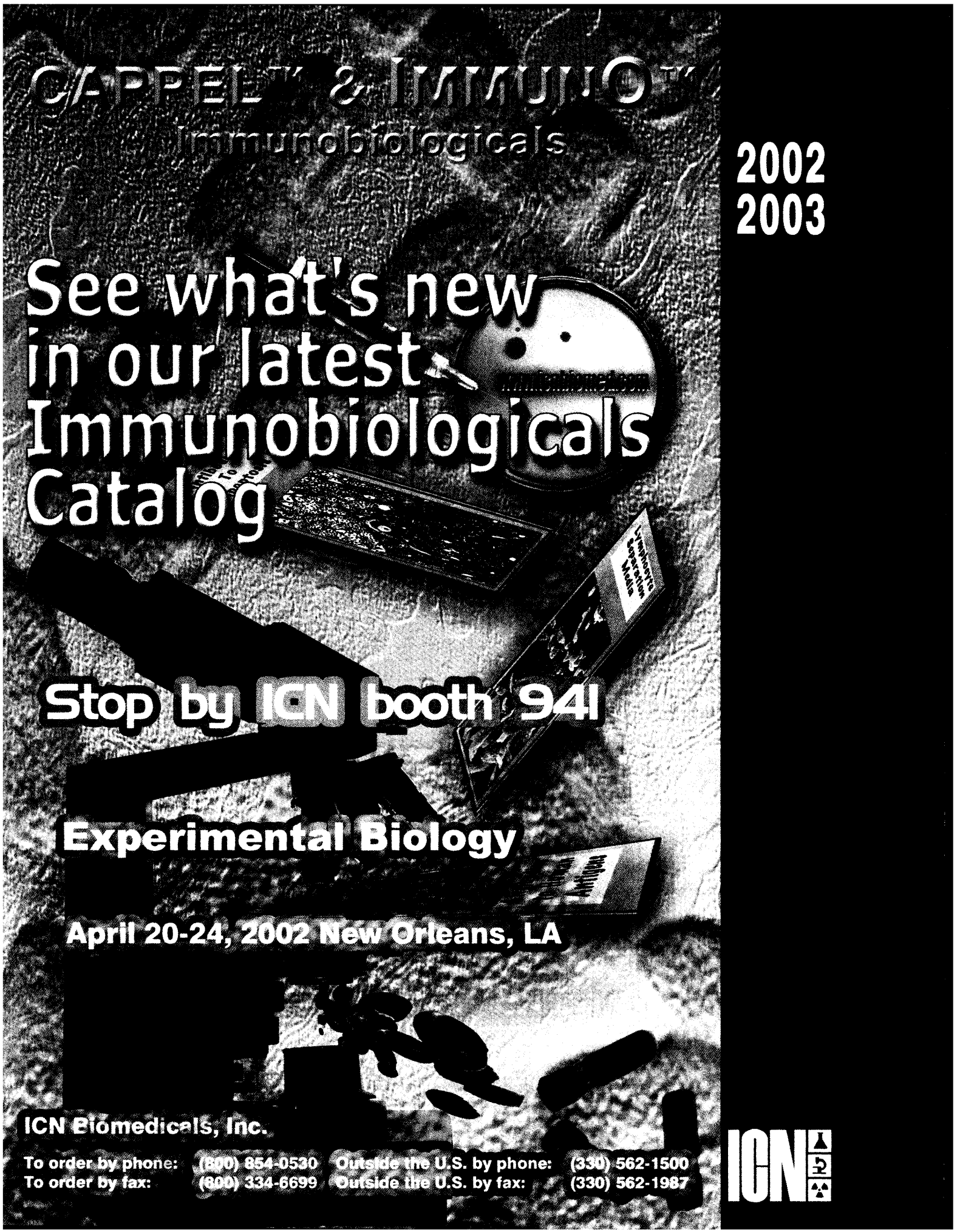
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LINUX COLLECTION

Linux for Chemistry is a CD with nearly 80 freeware and shareware programs that cover many types of data analysis and figure preparation. The collection includes several excellent packages for three-dimensional (3D) visualization, data reduction for structural studies, and molecular dynamics. Because few people are likely to use more than a handful of packages and because all the software is available freely on the Web, the advantages of an extensive collection on CD derive solely from easy installation and the availability of additional information about the packages. Linux for Chemistry is a disappointment in both respects.

Although Linux offers the power of Unix scientific computing on inexpensive hardware, installing programs designed for this operating system can be much more complex than similar installations on Macintosh or Windows systems. Linux for Chemistry provides precompiled software in its own directory, an arrangement that should avoid many configuration problems, and a graphical installer. This could potentially save a lot of time, especially if the documentation provided guidance for the utility of the programs.

Unfortunately, the only printed documentation is a slim "installation guide," which is little more than a file listing. Installation prerequisites are not adequately specified; a complete installation requires specific versions of Java, Perl, Python, Tcl/Tk, POV-Ray, and several libraries, which are not provided. Additionally, the script to start the installer is not in the location specified, and the installer interface is confusing. For example, when all packages are installed, one chooses between clicking "Next" and "Close"—the former restarts the installation from the beginning.

The software collection includes 15 3D visualization tools capable of reading the PDB format (used by the Protein Data Bank), including the excellent PyMol and the National Center for Biotechnology Information's Cn3D, but excludes the industry standard MolScript and the widely used MAGE. It includes two rudimentary 2D structure drawing programs but not xdrawchem, which is far superior.

Linux for Chemistry is aimed at a broad spectrum of users. Code libraries such as Boost and ccsl will be of interest to programmers. Some products, such as Tessel2 (a language for building crystals and other shapes) and Gamma (for nuclear magnetic resonance analysis), are complex applications that might take months to master, whereas other programs are useful primarily for novices. Many packages, such as SSIA ("A program for predicting the magnitude and orientation of a sterically induced alignment tensor from a solute's three-dimensional shape"), are very narrowly focused on a single task.

Although Linux for Chemistry includes some good software, it neither streamlines the installation process nor provides any information about which programs will be useful for a given task. Though the package may improve in the future, for now it is far more efficient to download relevant software directly from the original authors' Web sites.

—Rob Knight

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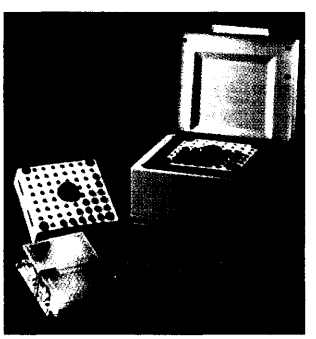

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CONTINUED ON PAGE 367

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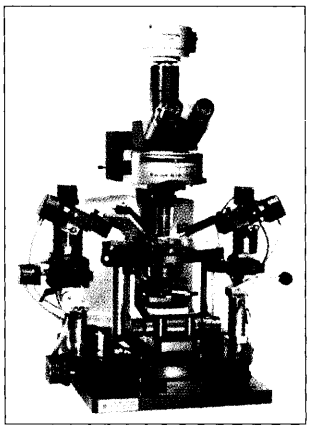

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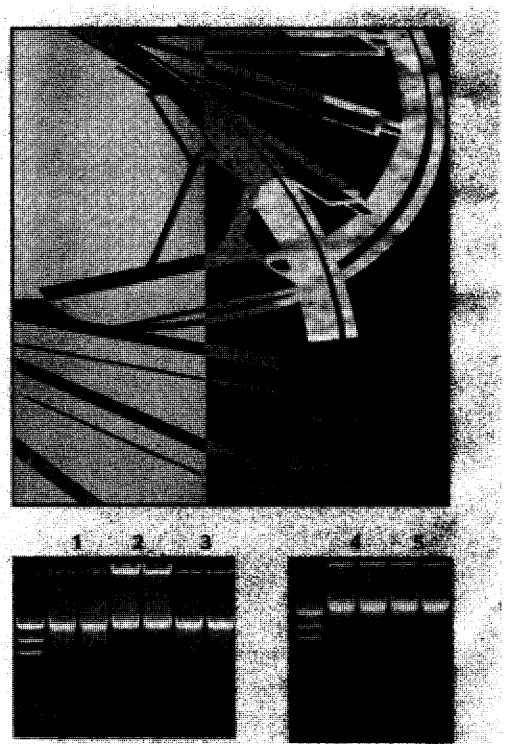

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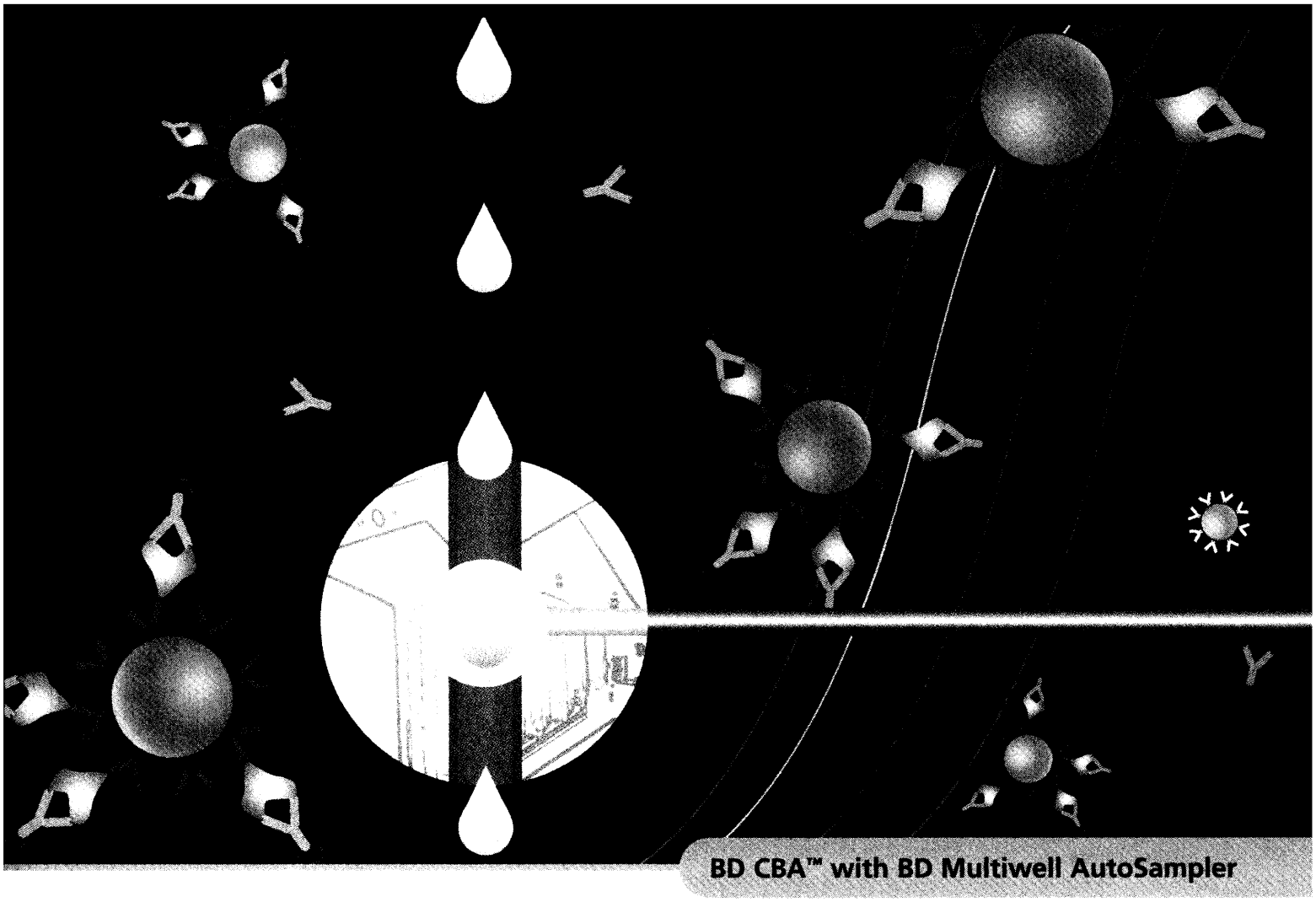
Newly offered instrumentation, apparatus, and laboratory materials of interest to researchers in all disciplines in academic, industrial, and government organizations are featured in this space. Emphasis is given to purpose, chief characteristics, and availability of products and materials. Endorsement by *Science* or AAAS of any products or materials mentioned is not implied.Additional information may be obtained from the manufacturer or supplier by visiting www.scienceproductlink.org on the Web, where you can request that the information be sent to you by e-mail, fax, mail, or telephone.



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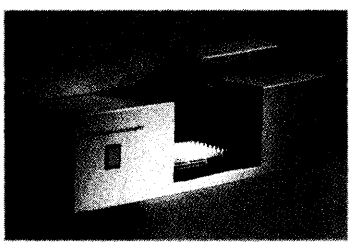

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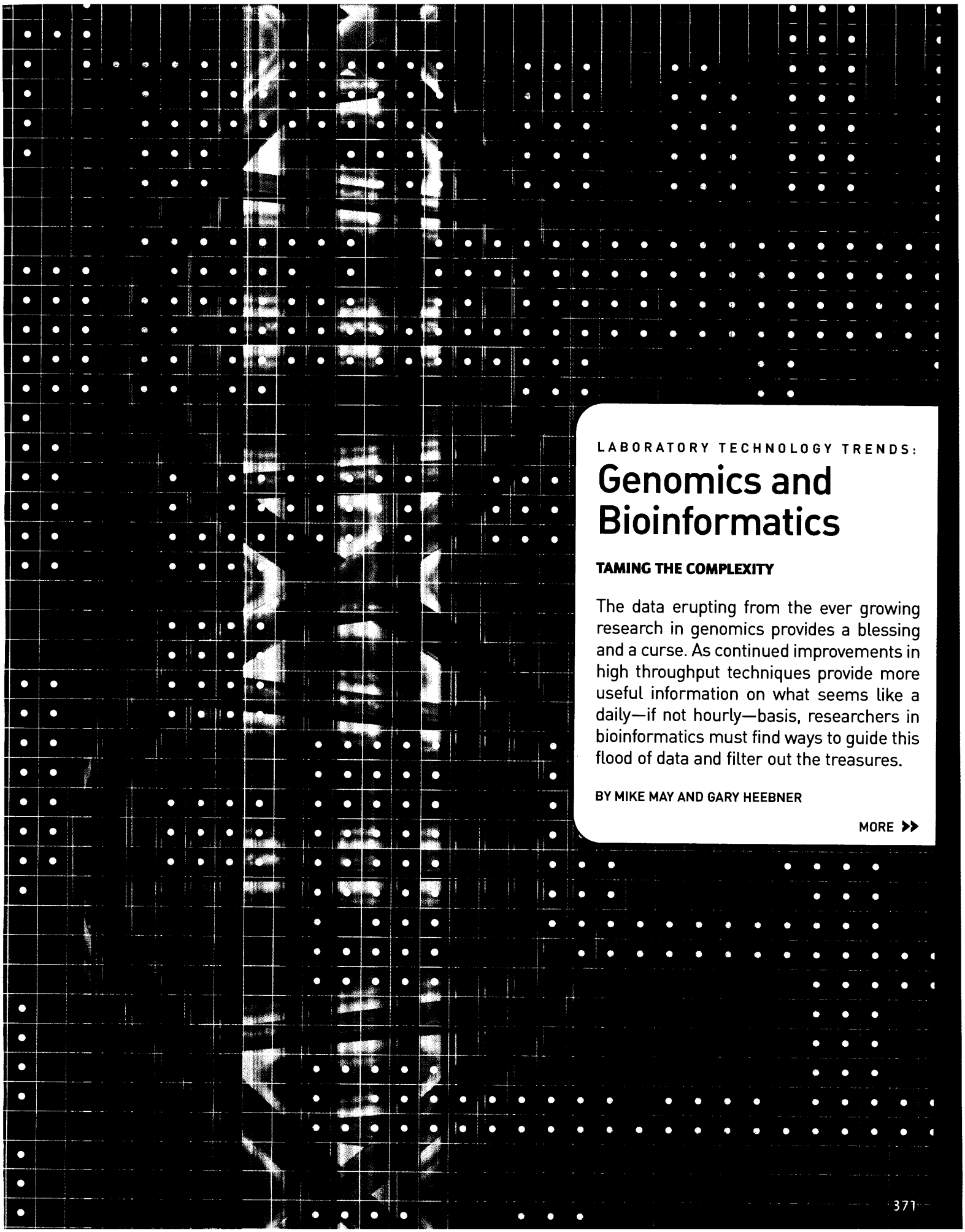

LABORATORY TECHNOLOGY TRENDS:

Genomics and Bioinformatics

TAMING THE COMPLEXITY

The data erupting from the ever growing research in genomics provides a blessing and a curse. As continued improvements in high throughput techniques provide more useful information on what seems like a daily—if not hourly—basis, researchers in bioinformatics must find ways to guide this flood of data and filter out the treasures.

BY MIKE MAY AND GARY HEEBNER

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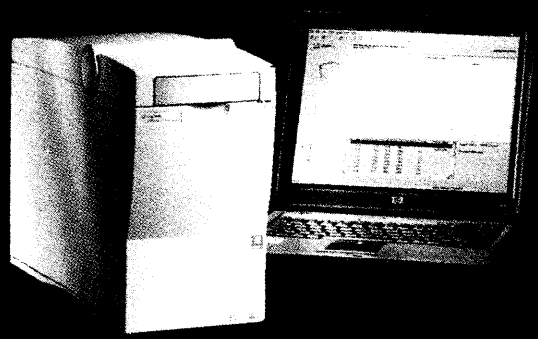
Revolutionizing life sciences research

Agilent 2100 bioanalyzer and lab-on-a-chip technology



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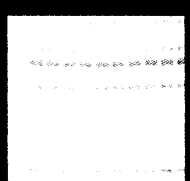
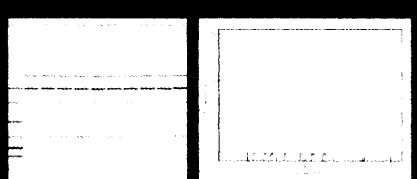


Conventional gel electrophoresis



Agilent 2100 bioanalyzer gel-like image and electropherogram

One of the many benefits the 2100 bioanalyzer has over conventional bioanalytical methods is the elimination of time consuming procedures. You will also enjoy standardized handling and interpretation of data, resulting in increased accuracy and precision. It automatically incorporates steps some researchers might otherwise ignore in the interest of time.

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LABORATORY TECHNOLOGY TRENDS:

Genomics and Bioinformatics

SECTIONS:

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The techniques designed to unveil the sequence of an organism's genome promised a new world of understanding for biologists. As time passed, the flow of data grew. Data started piling up, like water building into a wave. The crest of data rose higher than ever before, and kept growing. A promise of knowledge turned into a ongoing tidal wave—one that continues to flood labs with data around the world. But data alone cannot change the world of biological knowledge. Marty Rosenberg, vice president of research and development for Promega Corporation, said, "We're accumulating phonebooks of information about the coding information that makes up various organisms. Now, how do we use it?"

Despite the already data-swamped computers in labs, even more data lie ahead. Richard Durbin, head of the Informatics Division and deputy director of the Wellcome Trust Sanger Institute, said, "Sequencing is not over with. This year other vertebrate genomes are becoming available." He added, "We're getting large volumes of genomic data and that's very computer demanding. Sequence comparison is also computer demanding." To keep up with this pace of data creation, Durbin mentioned continuing improvements in computational resources. These include a new generation of algorithms that should help researchers deal with whole genome data sets. Nevertheless, more improvements could be made in software. Durbin said, "We've developed methods to find things—gene finding—and methods for comparing things once they're found, like BLAST, which lets you compare two sequences. Now, we want to integrate those two processes."

Moreover, this field will demand even more integration in the future. With growing numbers of sequences from different organisms, scientists could use these data to explore the biological function of genes. Nevertheless, Durbin said, "It's still hard to use comparative data effectively." In addition, scientists already want to explore the importance of variation in the genome between humans. This will involve even larger data sets.

To support these new endeavors, scientists need powerful and sophisticated software programs and supporting computer hardware to manage the raw data and dredge up the valuable information. Many fields of science—from genetics to drug discovery—already call on bioinformatics to capture valuable information in the flood of genomic data. Consequently, the curse of too much data already promises to be the blessing that researchers desired all along—more knowledge and better health.

SPEEDING UP THE SEQUENCING

After a decade of sequencing the DNA of a number of organisms, genome projects around the world produce enormous quantities of biological data. Some estimate that nucleotide sequences are being added to databases at a rate of several hundred million base pairs per year, and the database content nearly doubles annually.

This data collecting started in 1965 with the sequencing of an 80-base-pair yeast tRNA. Around 1970 the discovery of restriction enzymes and DNA polymerases made the sequencing of DNA possible. **New England Biolabs**, Promega, **Roche Molecular Biochemicals**, and other companies quickly produced products that opened this field to investigators who were not trained in molecular biology. For the first time, well-defined DNA fragments could be isolated from larger molecules, which enabled the sequencing of the genome of a bacteriophage, 5.4 kilobases in size, in 1976.

In 1977, scientists learned to sequence DNA in two new and relatively simple ways: Fred Sanger's dideoxy chain termination method and Allan Maxam and Walter Gilbert's chemical degradation method. In 1981, the Sanger dideoxy method revealed the sequence of human mitochondrial DNA, which consists of 16,500 bases. In 1983, scientists used the Maxam and Gilbert chemical degradation method to sequence DNA from the bacteriophage T7, which included 40 kilobases.

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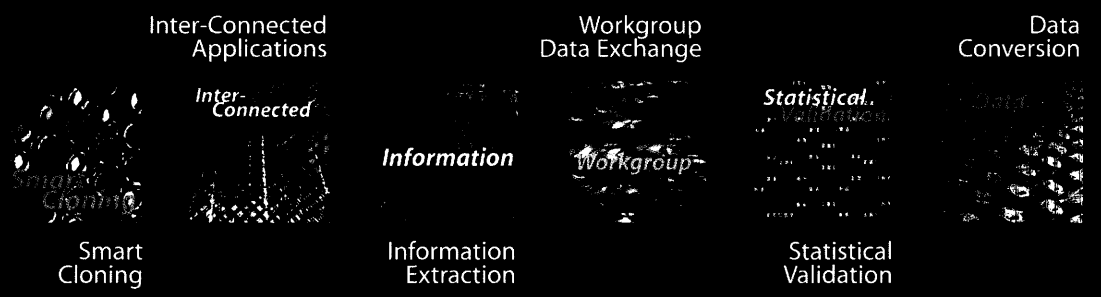

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Genomics and Bioinformatics

Today, scientists also seek enhanced speed in looking for variations in genomes, especially single nucleotide polymorphisms, or SNPs. For example, Promega's READIT SNP Genotyping System is used to interrogate SNPs. Marty Rosenberg, vice president of research and development, said, "As we were developing the assay to detect polymorphisms, we observed a very high degree of accuracy." The accuracy is so high that Rosenberg and his colleagues hope to develop takeoffs on the READIT technology for clinical applications.

In addition, this assay can perform quantitative analysis. Promega's AluQuant Human DNA Quantitation System is based upon the READIT technology. This assay provides human specific DNA quantitation in the presence of contaminating DNA, which is crucial for forensic DNA analysis. Forensic scientists also use Promega's DNA IQ System to purify genomic and mitochondrial DNA. Rosenberg said, "The DNA IQ System is being used by life scientists to purify all of the DNA from small samples, or a defined amount of DNA in samples where DNA is in excess. The amount of DNA isolated from a sample can be tailored to the specific downstream application." The product was used for DNA isolation at Ground Zero after the terrorist attacks last September.

ADVANCES IN AUTOMATION

In the late 1980s, companies developed the first automated DNA sequencers. These instruments could perform gel electrophoresis, scan gels, and determine the sequences of nucleotide bases without constant attention from laboratory researchers and technicians. Some of the companies that developed these sequencers include **Amersham Biosciences**, **Applied Biosystems**, **Beckman Coulter**, and **LI-COR**.

Today's systems related to DNA sequencing often come in automated work stations, like the products created by **Bio-Tek Instruments**, **Hamilton Company**, and **Packard BioScience Company**. For example, Bio-Tek Instruments specializes in automated work stations for research applications. This company provides microplate readers, washers, data reduction software, and automated systems for liquid handling that are used in genomic research.

Beckman Coulter, **Genomic Solutions**, and **Zymark Corporation** push automation ahead even further by creating robotic systems that perform many of the upstream and downstream processing tasks that are required for DNA sequencing. For example, Beckman Coulter's Biomek 2000 Laboratory Automation Workstation and Biomek FX perform tests that range from the processing of samples for DNA sequencing to ELISA assays. These modular systems move the sample from one stage to the next with a robotic arm. Overall, these systems can automate virtually any liquid handling procedure—pipetting, diluting, dispensing. According to Jim Osborne, vice president of advanced technology, "These devices were designed with high throughput and drug discovery in mind." He added, "The strategic focus of Beckman Coulter is to simplify and automate processes from drug discovery to patient testing." Osborne pointed out repeatability as one fundamental benefit of automation. He said, "You want to eliminate as much possibility of error in the original data as you can."

ASSAYS AT YOUR REQUEST

To make all of these automated systems work, scientists need assays to run in them. This year, Applied Biosystems expects to release its Assays-On-Demand, which is based on the TaqMan reagent technology. Gene Spier, senior director of bioinformatics, said, "We select SNPs at about every 10 kilobases in a gene and then validate an assay for each SNP by genotyping 92 individuals." Consequently, Applied Biosystems will eventually supply gene expression assays for every gene in the genome and a set of 200,000 SNP assays. Using these, Spier said, "Investigators can look for a correlation between genotypes, haplotypes, or expression patterns and a disease." In addition, Assays-By-Design already provides custom SNP and gene expression assays.

The combination of so many assays and automated systems to run them should enhance the predictive side of many research areas, including drug discovery. Clifford Baron, director of marketing for global services and solutions at Applied Biosystems, said, "With the completion of the genome, bioinformatics is really maturing from a somewhat speculative arena to a very applied arena, where it can be very robust and predictive." Applied Biosystems's ABI PRISM 7900 Sequence Detection System, for example, will help scientists feed their bioinformatics software. This device performs real-time PCR and measures fluorescence in several colors. It also can be used with many off-the-shelf assays from

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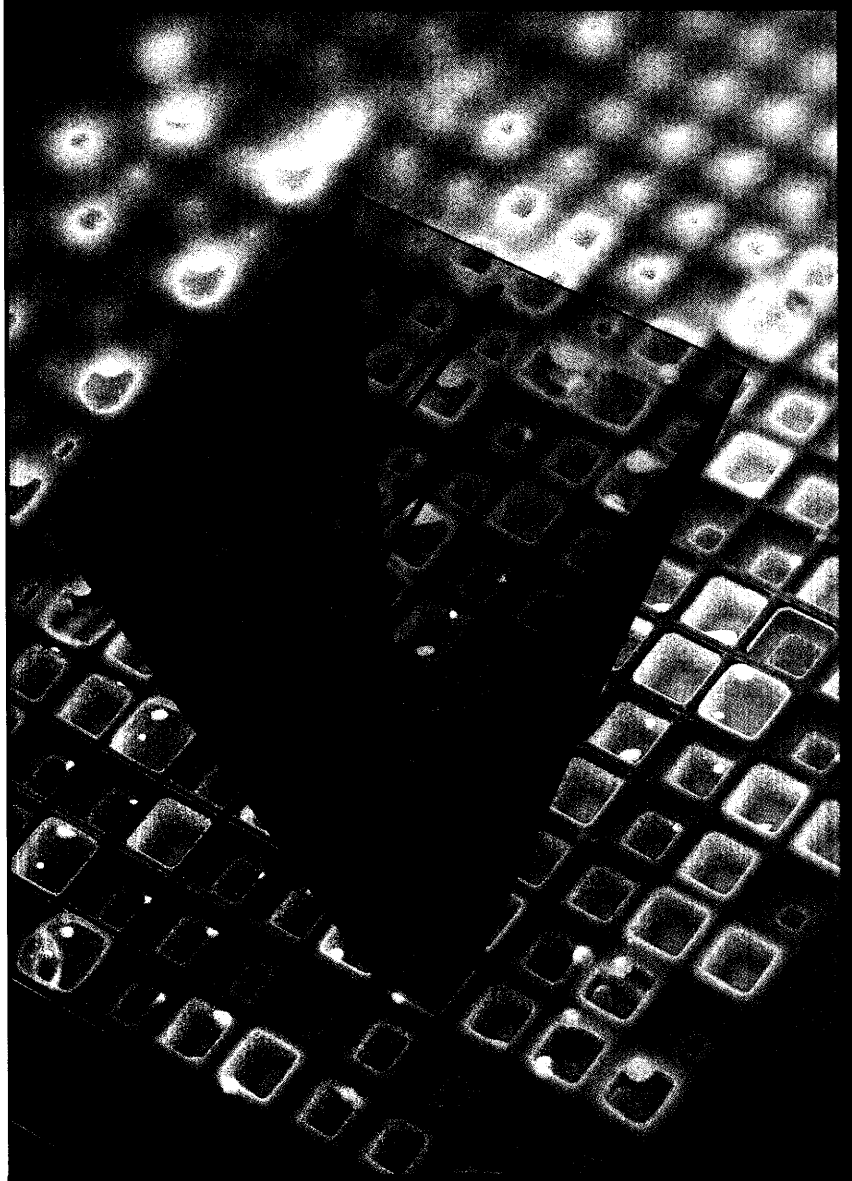

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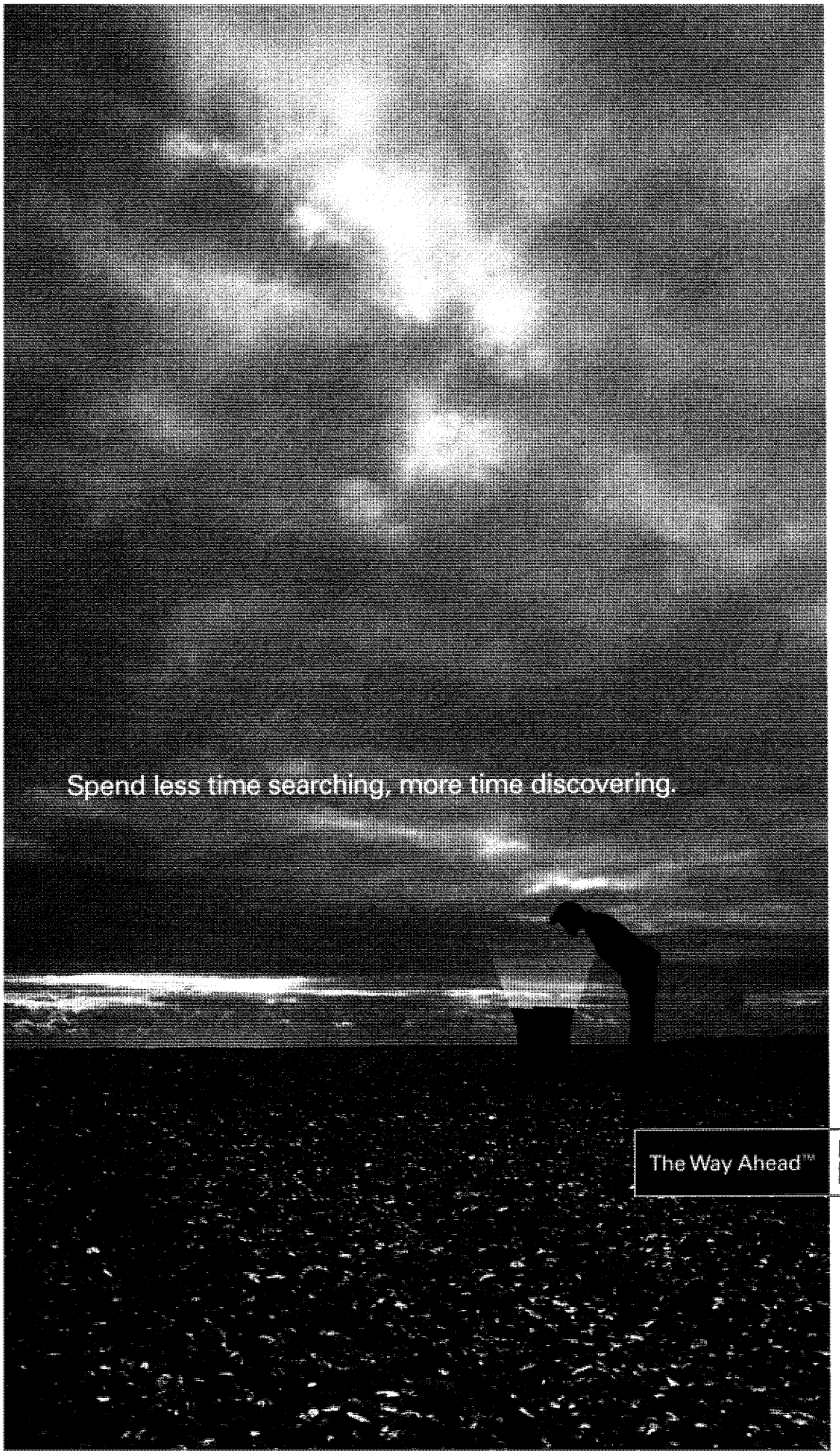

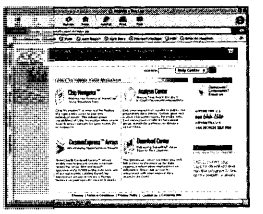

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Assays-On-Demand. Spier said, "Now we provide a more complete solution, and our e-commerce website will provide the list of genes of interest and you can select and order assays that are guaranteed to work."

High throughput devices from Applied Biosystems will push ahead even further this June when it introduces a genotyping array system. In this system, DNA will hybridize to beads at the end of an optical fiber. This system will provide 40-fold replication in searching for any SNP of interest–all in a single operation on a 96-well plate.

LIFE FROM DEATH

In looking for ways to keep organisms alive, scientists often look at cell death. The basic mechanisms of cell death, or apoptosis, can reveal fundamental patterns of development. In drug development, the onset of cell death can show that a drug works as desired, if it kills the right cells, or that it is toxic, if healthy cells start dying. Rosenberg said, "Pharmaceutical companies are moving their *in vitro* toxicology assays earlier and earlier in the drug discovery process. As they've done that, they need systems that can be scaled up, because they have so many more chemistries to screen."

Promega created a couple of products targeted specifically at cell viability. Apo-ONE Homogeneous Caspase-3/7 Assay searches for apoptosis in cultured cells. Investigators can apply a drug candidate to a culture and then use Apo-ONE to see if the cells die. According to Rosenberg, "Apo-ONE is sensitive down to at most a hundred cells. We're developing a new assay that will take that sensitivity down to 1 to 10 cells."

Promega also provides CellTiter-Glo Luminescent Cell Viability Assay to assess a potential drug's effects. This one-step assay measures ATP levels by way of the enzyme luciferase. Rosenberg explained: "When cells die, the first thing that happens is that they deplete their ATP. In this assay, as cells die the lights go out."

Promega also uses bioluminescence as the indicator in its Dual-Glo Luciferase Assay System. This assay helps researchers track the expression of two different genes in the same experiment. As a result, you can simultaneously track an experimental reporter–or a gene that you are trying to stimulate–and a control to normalize your results. Such an assay should reduce variability in experiments, thereby providing more reliable data.

CALCULATING THE COMPARISONS

In addition to collecting large volumes of sequence data, scientists also want to know what different genes do. Once investigators know what one gene does, they can look for similar sequences in other organisms, where the gene probably does the same thing. For example, a significant number of cloned human genes matched yeast sequences with known functions. According to Thomas Madden of the **National Center for Biotechnology Information** (NCBI), "Scientists use the results of a sequence similarity search to infer the function of newly discovered cDNAs, predict new members of gene families, and explore evolutionary relationships. Since whole genomes have been completed, scientists can use similarity searching to predict the location and function of coding and regulatory regions in genomic DNA." Scientists can search for such similarities through several public databases: **GenBank**, **EMBL** (European Molecular Biology Laboratory), and **DDBJ** (DNA Database of Japan).

The EMBL Nucleotide Sequence Database consists of DNA and RNA sequences that come from individual researchers, genome sequencing projects, and patent applications. EMBL, GenBank, and DDBJ collaborate on this project. Each group collects a portion of the total sequence data reported worldwide, and they exchange data daily.

Anyone working in this field recognizes the acronym BLAST, which stands for the Basic Local Alignment Search Tool. Madden said that BLAST "calculates similarity for biological sequences." He added: "It uses some smart shortcuts to get to its answer faster and also uses statistical theory to calculate an expected value–basically a false positive rate–that lets the user know how surprising–and hence interesting–the results are." PSI-BLAST can also create a profile while searching one database, and then use the same profile to search another database. Madden said that can produce more sensitive results and find more distant relationships.

Right now, sequence similarity programs face several challenges. Madden said, "The databases are doubling in size every year or less, so speed will always be an issue, and there will always be the need to find faster ways to get the results." As the number of known sequences increases and scientists increase the number of entire genomes available, these programs must grow even more sensitive. In other words, searches must produce fewer false positives in looking for matches. Madden added, "It is also becoming more important to present the results in a manner that helps the user understand the biology better. Displaying the results in the MapViewer at the NCBI is one way this problem is being addressed."

To keep this field moving ahead, a variety of companies create software for searches. For example, **Accelrys** and **Textco** offer suites of programs that include BLAST searching and more.

SOFTWARE FOR SEQUENCING

In 1982, Frederick Blattner, a geneticist, and John Schroeder, a computer scientist, teamed up to generate sequence analysis software. Their company, **DNASTAR**, now produces the Laser-

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gene suite, which provides sequence assembly, gene discovery, and more. General manager Tim Burland said, "Our suite is comprehensive. It is easy to use but also powerful."

In today's laboratory, however, sequencing can often be just the first step. Consequently, Lasergene also performs additional tasks. For example, the Protean application predicts and displays the secondary structure of a protein that a sequence would generate. Lasergene's MapDraw supplies restriction mapping and vector drawing. Burland said, "You can add the whole *E. coli* genome—4.6 megabases—to MapDraw and get a restriction map of it, without any special hardware."

This year, DNASTAR is working on a new sequence assembly product that will handle more sequences and faster. For example, conventional assembly software ran in exponential time, meaning that twice as much data demanded four times as much computer run time; but Burland says the new system will run in linear time, so that twice the data runs in just twice the time. Burland said, "This application will assemble 100,000 sequences on a desktop computer in just two hours." He added, "A lot of genome assemblies out there are not perfectly correct, so investigators could use this assembler for validation or for independent assessment of an assembly."

THE COMPUTING CHALLENGES

Compaq Computer Corporation, **IBM Life Sciences**, **Sun Microsystems**, and other companies see the present and future value of applying some of their resources to life sciences. The work under way by these computer giants keeps creating new software, hardware, and networking solutions that keep helping biology take another step ahead.

Investigators at Compaq believe that the challenges for computing from today's life sciences demand tools created by integrated teams. For example, the Compaq Bioinformatics Solutions Center includes biophysicists, computational scientists, and others to explore new approaches to data issues. Ty Rabe, director of high performance technical computing solutions at Compaq, said, "One area we work in is bioinformatic applications themselves—how to design, optimize, and run them. We also study how to build the architecture of high performance computing environments and then integrate it with the workloads. In addition, we design data management environments, which are particularly important in bioinformatics."

In general, investigators at the Bioinformatics Solutions Center seek repeatable solutions that could benefit a broad base of customers. Rabe said, "Typically we find that if we can solve an overall problem for Celera or the Sanger Institute then we can apply it to many other customers." For the most part, these solutions involve computing infrastructure.

Rabe indicated that more complicated work lies ahead. He said, "It's very clear that in genomics and related applications that we are really at the front end of this—the simple end in terms of complexity. The genome is the lowest level of complexity. The next step is looking at protein structure and understanding how gene-protein interactions might lead to new drugs, and the protein problem is much more complicated than the gene problem." To meet the computational demands required by proteomics, the computing power, according to Rabe, must increase by at least an order of magnitude. He added: "From proteins, we move to cells, tissues, and ultimately to organs and whole organisms. I don't think people know what it will take to simulate whole organisms."

In the past, the computing industry generally kept pace with Moore's Law, which states that computing performance doubles every 18 months. Now, Rabe says that fundamental features of nature—including the physical size of molecules and the speed of light—create problems for getting more computing power by making smaller components. Consequently, the next step in power could come from massively parallel processing, which is simply using many computers to work as a team on a single problem—all at once. Rabe indicated that prototype systems that use hundreds of thousands of processors simultaneously should be out in a few years. In looking ahead, he said, "The genomics industry will be as important in a few decades as computers are now."

PUSHING AHEAD, TODAY

Although many intriguing advances will certainly come along, today's technology can also provide some immediate steps ahead. Stephen Lincoln, executive vice president of product development and chief scientific officer at **InforMax**, said, "People talk about data overload and data integration. These are interesting challenges and advancing technology to that point will be a boon to our industry, but data integration is not the Holy Grail. Even with it integrated, what do you do with it?"

Lincoln takes a broader look at integration, thinking of it as a stool with three legs. Data integration is the first leg. The second leg is genomic integration, which Lincoln called "the actual knowledge of why you're putting that data together and what you'll do with them. For us it's all about taking the tools of the genome and bringing them into real science so that we can use the genome to solve real problems." The third leg of integration, according to Lincoln, is wet lab integration. He said, "No matter what a bioinformatic system will do for you, you're still talking about a computerized system that does the best it can with the caveats and complexity of the data, but the data contradict themselves sometimes. We must tie the tools of bioinformatics into day-to-day wet lab processes so you can test the hypotheses."

WORKING WITH COMPLEXITY

"Real medical problems are very complex, and few can be reduced to a single gene. Even then, it might not be a good drug target," said Roland Somogyi, chief scientific officer at

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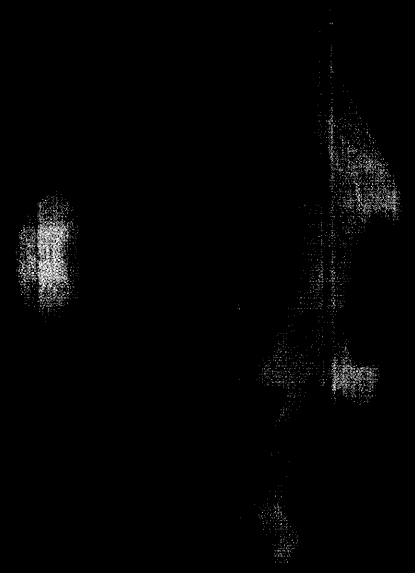

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Molecular Mining Corporation. The complexity of disease forces scientists to combine data on large sets of genes from different experiments—from SNP variation to RNA and protein expression to toxicology—to find the best drug candidates. These so-called combinatorial relationships often prove much more powerful as predictors than any single piece of data might be. (For more information, see R. Somogyi and L. D. Greller, The Dynamics of Molecular Networks: Applications to Therapeutic Discovery, *Drug Discovery Today* **6:**1267–1277, 2001.) For example, multiple SNPs—perhaps from thousands to hundreds of thousands of patients—reveal more about disease than any single SNP. Somogyi said, "If you're not committing to a large enough data set, you may be wasting your time." He added, "We need the advanced data mining to extract the most informative, complex relationships in data sets. Only then can we fully enable the promise of genomics-driven therapeutics." As the data sets grow, relationships crop up by chance. Accordingly, analysis must not only reveal relationships, but show that they are statistically valid.

To work with these large sets of data, Molecular Mining provides GeneLinker. The 2.0 Gold version of this software came out in January of this year, and it helps scientists explore data sets from expression analysis. It uses clustering techniques that arrange expression data into functional groups. When describing clustering, Somogyi said, "You're trying to find patterns of similarity. You can imagine there's a space of possible expression patterns but biology uses only a small volume of that, and those are the clusters. Often within these gene clusters, you find genes from related pathways."

The next version of GeneLinker, Somogyi says, will allow scientists to start making predictions. In other words, this software analyzes expression data and then picks out the gene sets that seem most predictive of, say, a given disease or drug response. In this way, it helps researchers plan future experimental steps.

Even more exciting work is on the horizon. Somogyi said, "Once we get more time series data, we can extensively reverse-engineer gene regulatory networks. But we need larger data sets to validate that further. While the genomic data flood may provide crippling challenges for some analytic approaches, the performance of our reverse-engineering methods improves with increasing depth and complexity of the datasets our partners provide. Of course, judicious experimental design is a prerequisite here also." The reverse-engineering approach could reveal many pathways by merely looking at their outputs. From exploration of these *in silico* models, scientists can more thoughtfully select the wet lab experiments to perform. Advanced bioinformatic software is also being produced by many other companies, including **BioTools**.

TAKING ADVANTAGE OF VARIATION

In the end, the real bonanza could come from genomic variation—difference from one person to the next. For example, people with a particular SNP might respond better to one drug than another. These differences in response to a drug arise from variations in the enzymes that metabolize drugs, receptors, and other molecules involved in cellular metabolism. To use any knowledge of variation, scientists need ways to easily assess a patient's genetic makeup.

Third Wave Technologies applies its Invader to this task. Invader products detect and quantify DNA and RNA. Lance Fors, Third Wave's chief executive officer, said, "Invader is the only technology that doesn't require PCR as part of the sample preparation." He added, "It's precise enough that you can throw it into a large haystack of DNA and detect—with 99.9 percent accuracy—any sequence or sequence variation."

This company already offers Invader assays for more than 100,000 unique SNPs. Users of this system receive microtiter plates—with 96 or 384 wells—and just add their samples. The results can be read with a fluorescent microtiter plate reader, which many laboratories already have. Fors said, "Part of our focus is enabling an understanding of the whole genome and its association with disease, and quickly focusing that into pharmacogenetics."

Through these combinations of technology, today's phonebooks of data will grow into tomorrow's advances. Success involves collecting better data and finding ways to make use of it, and fast. As scientists discovered in the early stages of genomics, it takes an interdisciplinary team to crack codes from genetics to proteins and beyond. Still, the rewards loom large.

Mike May is a freelance writer based in Madison, Indiana, U.S.A. Gary Heebner is a marketing consultant serving the scientific industry, based in Foristell, Missouri, U.S.A.

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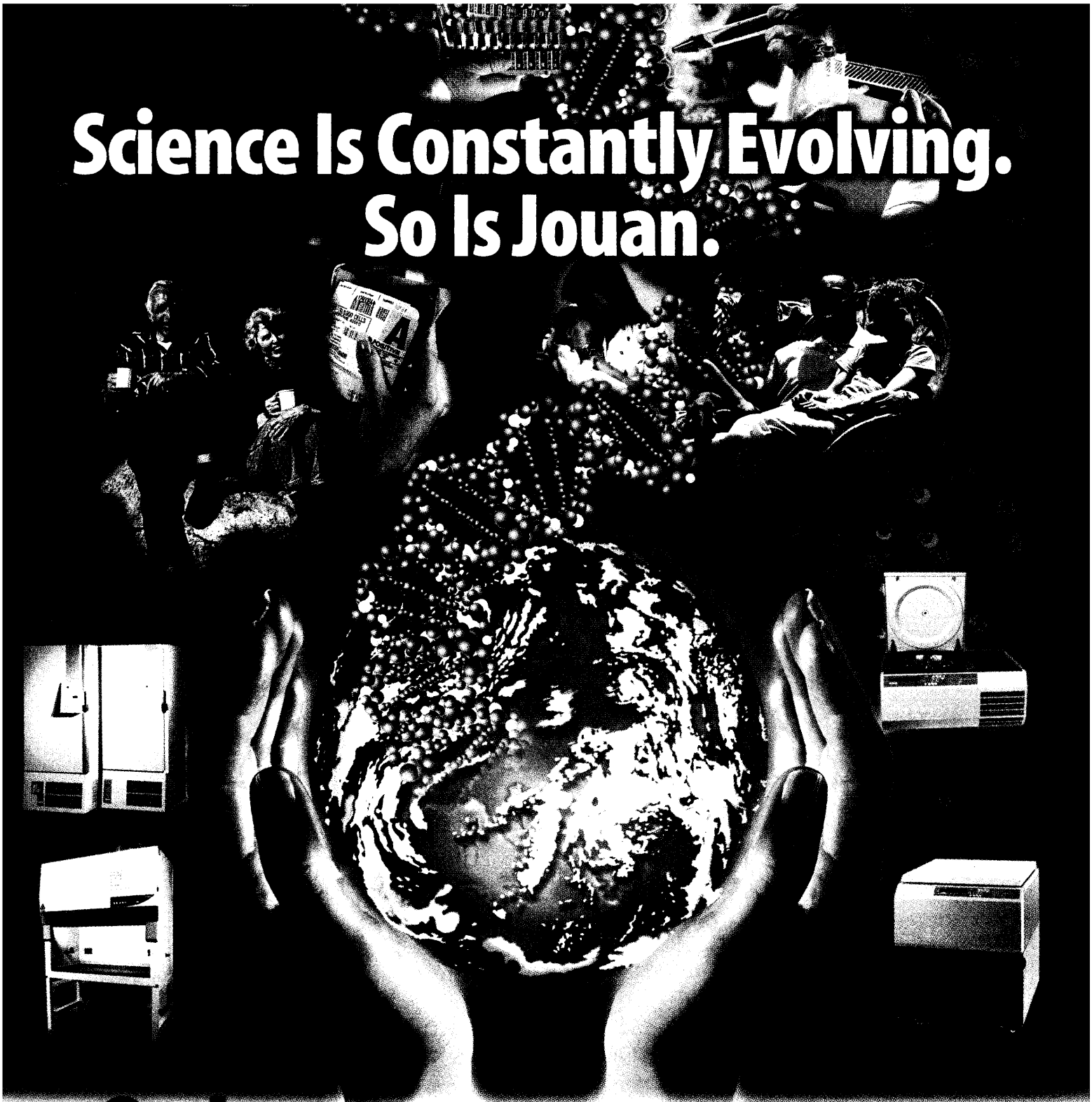

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The Center for Drug Evaluation and Research (CDER) seeks a Microbiologist for the Division of Counter-Terrorism. This Division is being established within the newly formed Office of Pediatric Drug Development and Program Initiatives (OPDDPI). This area is a special initiative by the Food and Drug Administration (FDA) to meet the drug availability and safety needs of the Nation's counter-terrorism efforts. This vital Division is an expanding organization, whose mission and responsibilities include oversight of the Center's counter-terrorism work.

This position offers the opportunity to provide scientific and regulatory guidance to sponsors at all phases of drug development from clinical trial design to evaluation of clinical trial data submitted for product approval. Examples of products evaluated by the Division are therapies for microbial agents that have the potential to be used as biological agents of terrorism such as smallpox, Ebola, anthrax, tularemia, plague, etc.

A multidisciplinary team approach facilitates interaction with a wide range of scientific disciplines. The position involves working with the pharmaceutical industry, individual investigators, other government agencies and academia. In addition the position offers opportunities to work on a variety of special initiatives directed at new approaches in drug development. Training opportunities both within and outside the Agency are available and encouraged.

QUALIFICATIONS: Basic requirements for this position are a degree in microbiology, biology, chemistry, or basic medical science that includes 20 semester hours in microbiology and other subjects related to the study of microorganisms, and 20 semester hours in the physical and mathematical sciences combining course work in organic chemistry and biochemistry, physics, and college algebra, or their equivalent. Candidates for Civil Service or U.S. Commissioned Corps must be U.S. citizens. Permanent U.S. residents may apply for staff fellowship appointments.

HIGHLY DESIRABLE: A doctorate degree with at least two years experience in clinical microbiology and/or infectious diseases. Also desirable is experience in assessment of the mechanisms of actions and resistance to anti-infectives, epidemiology of infectious diseases; work with animal models of infectious diseases; evaluation of experience in clinical microbiology and/or immunology, pharmacokinetic/pharmacodynamic data from animal and human studies; evaluation of clinical/microbial efficacy data from clinical trials; and determining in vitro susceptibility test interpretation criteria.

SALARY RANGE: Civil Service salary range: GS-14, $78,625 to $101,742 (pending peer review). Salary, benefits and level of responsibility are commensurate with education and experience.

HOW TO APPLY: Submit resume with cover letter indicating that you are applying under source code 102026 to:

FOOD AND DRUG ADMINISTRATION
Center for Drug Evaluation and Research
7520 Standish Place, Room 229, HFD-10
ATTENTION: RECRUITMENT
Rockville, Maryland 20855

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MALARIA PROGRAM
NAVAL MEDICAL RESEARCH CENTER

The Naval Medical Research Center (NMRC) Malaria Program is an international leader in malaria research and has established itself as a premier center for vaccine development and genomics research. The Malaria Program is seeking senior scientists to direct the research in three of its major program areas.

CLINICAL IMMUNOLOGIST

The individual will head the Clinical Immunology group in support of malaria vaccine clinical trials, as well as conduct basic and applied immunology research. Responsibilities include developing, evaluating and implementing methods for monitoring immunological responses, with particular emphasis on T cell immune responses. Experience with ELISPOT assays, flow cytometry, dendritic cell culture, cytotoxic T-cell assays, assay development and validation, immunologic monitoring of clinical trials and familiarity with standards of Good Laboratory Practices are highly desirable

GENOME SCIENTIST

The individual will head the Applied Genomics group. This position offers the opportunity to build and expand on the recent developments in malaria genome sequencing and functional genomics focusing on the transition of genomic sequence and functional genomics data into effective malaria vaccines. Thorough knowledge of molecular biology, genomics, and basic informatics is required. Individual will oversee and coordinate genomics efforts across disciplines in the Malaria Program.

PRIMATE IMMUNOLOGIST

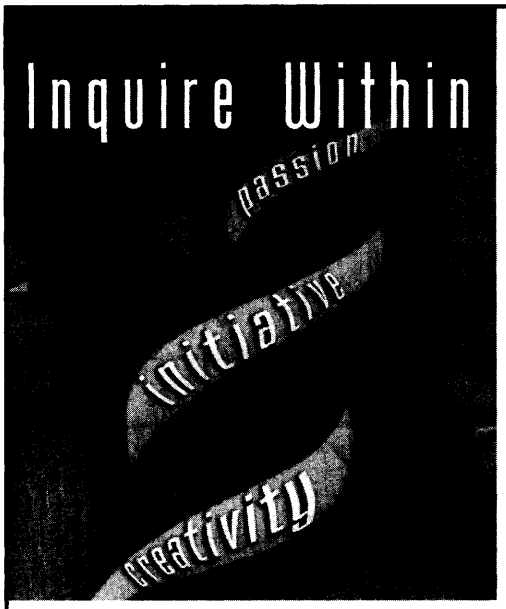
The individual will head the Primate Immunology group of the Malaria Program, in support of preclinical evaluation of novel candidate malaria vaccines. The position offers the opportunity to conduct applied research in immunology and vaccinology, building on the foundation provided by small animal models and transitioning to clinical evaluation of promising vaccine candidates. Proficiency in molecular biology, cellular immunology and/or DNA vaccination is particularly desirable.

GENERAL INFORMATION

Candidates must have a demonstrated proficiency to carry out high quality research and a proven record of accomplishment. Forward thinking, innovation and creativity are encouraged. Strong leadership and management skills are desirable, and excellent verbal and written communication skills are essential. Minimum requirements include a Ph.D. and/or M.D. with five years of senior level research and/or management experience. Work will be performed at state-of-the-art research laboratories in Silver Spring, MD. Selected individuals will be employees of the Henry M. Jackson Foundation for the Advancement of Military Medicine. Competitive starting salary. Benefits include paid leave, medical insurance, retirement, and parking. A statement of research interests, detailed curriculum vitae, and names of three referees, should be submitted to: **Administration, NMRC Malaria Program (IDD), 503 Robert Grant Avenue, Silver Spring, MD 20910-7500; Fax: (301) 319-7541; Email: oharem@nmrc.navy.mil.** Email or fax responses are strongly encouraged. Applications should be received by 6 May 2002, but the application process will continue until the positions are filled.

The Jackson Foundation is a private, not-for-profit organization chartered by Congress to support military medical research and education. Additional information is available at the **website: www.hjf.org.**

The Foundation is an affirmative action/equal opportunity employer.



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OPPORTUNITIES IN OUR IMMUNOLOGY DEPARTMENT

Working within Immunology and collaborating on an in vivo biology team, staff members will design and utilize in vivo models to investigate the pathophysiology of important human diseases, determine the role of specific molecules and pathways in those diseases, and evaluate therapeutic agents both for proof-of-concept purposes and for efficacy.

Scientist

Working in a new focus area of animal models of autoimmunity and inflammatory disorders, this program is centered on the development, refinement and application of advances in animal physiology aimed at *in vivo* models of autoimmunity and inflammation. You will work with multiple departments including Physiology, Pathology and Biostatistics. Requires a PhD, MD or DVM with a strong background in animal models of disease. You should be innovative with excellent interpersonal skills and have a strong desire to incorporate cutting edge technologies into *in vivo* models of disease. Job Code: 4195-SCI

Scientist

You will help develop a new program in the discovery and evaluation of immune cell targets and therapies for autoimmune disorders. Requires a PhD or MD with a strong background in molecular, cellular and/or developmental immunology. You should be innovative with excellent interpersonal skills and have a strong desire to incorporate cutting-edge technologies into research programs. A strong publication record is necessary. Job Code: 4839-SCI

*To apply for these positions, please visit our Careers page at **www.gene.com** and indicate the Job Code listed above, or mail to Genentech, Inc., Attn: Human Resources, PO Box 1950, South San Francisco, CA 94083-1950. Genentech is an Equal Opportunity Employer.*

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UCDAVIS School of Veterinary Medicine

CENTER FOR VECTOR-BORNE DISEASES AND DEPARTMENT OF PATHOLOGY, MICROBIOLOGY, AND IMMUNOLOGY SCHOOL OF VETERINARY MEDICINE, UNIVERSITY OF CALIFORNIA, DAVIS

POSITION AVAILABLE: Assistant Professor in the Department of Pathology, Microbiology and Immunology (20%)/Assistant Arbovirologist in the Experiment Station, UC Davis Center for Vector-Borne Diseases (80%), School of Veterinary Medicine

SALARY: Dependent on qualifications and experience.

QUALIFICATIONS: Ph.D. or equivalent degree with postdoctoral experience in the molecular biology/genetics of arthropod-borne viruses (arboviruses) required. DVM or equivalent clinical degree desirable, but not required. Demonstrated aptitude/experience in teaching. Demonstrated research record or potential to develop an independent research program in molecular virology. Demonstrated ability or potential to obtain competitive extramural funds. Willingness to contribute to a multi-disciplinary team of faculty and government agencies, while maintaining an independent research program. Excellent interpersonal and communication skills and an ability to work with others in a collegial team atmosphere.

RESPONSIBILITIES: Research: Development of a creative, independent, and productive research program in molecular virology is a fundamental and indispensable requirement of the position, including publication of results in professional/scientific journals. Examples of research that the successful candidate could pursue include but are not limited to the interaction of arboviruses with their arthropod vectors, virus-vertebrate interaction, arbovirus evolution, epidemiology of arboviruses, and research on level-3 arboviral agents. The individual selected will be expected to contribute to the Davis Arbovirus Research Unit and to direct research projects of graduate and professional students and postdoctoral fellows. **Teaching:** Responsibilities include: (1) participation in virology lectures and laboratories in the D.V.M. professional curriculum and/or (2) participation in campus graduate programs. **Service:** University and public service including committee work, participation in professional organizations, continuing education and other appropriate means.

CENTER MISSION: The objective of CVEC is to foster collaboration among UC faculty in order to advance understanding of vector-borne pathogens and to use that knowledge to prevent disease within California, nationally, and internationally. CVEC advocates a multidisciplinary approach for addressing important questions regarding the ecology, epidemiology, disease potential and risk assessment of vector-borne pathogens. The fundamental premise is that with increasingly detailed understanding, vector-borne arboviral diseases such as West Nile and dengue fever can be anticipated and prevented.

APPLICATION PROCESS: To receive fullest consideration, applications must be received by May 15, 2002; position open until filled. Interested applicants should: (1) submit a letter of intent outlining their interest in the position, overall related qualifications and experience, and research goals; (2) a curriculum vitae; (3) copies of three to five publications; and (4) names and addresses (mailing and email) of at least three references to: **John D. Edman, Director, (email: jdedman@ucdavis.edu), Center for Vector-borne Disease Research, School of Veterinary Medicine, University of California, Davis, CA 95616.**

The University of California, Davis, the Center for Vector-borne Disease Research, and the Department of Pathology, Microbiology and Immunology, School of Veterinary Medicine, are interested in candidates who are committed to the highest standards of scholarship and professional activities, and to the development of a campus climate that supports equality and diversity. University of California is an affirmative action/equal opportunity employer.

Division Director

LIFE SCIENCES DIVISION

Oak Ridge National Laboratory

Scientists and engineers at ORNL conduct basic and applied research and development to create scientific knowledge and technological solutions that strengthen the nation's leadership in key areas of science; increase the availability of clean, abundant energy; restore and protect the environment; and contribute to national security.

ORNL also provides an environment that encourages collaborative research and development, and promotes access to the Laboratory's facilities by researchers from other research organizations, industry and academia.

Candidate will be responsible in both a managerial and technical capacity to provide leadership for a 150- to 200-person organization. In general, the Division Director will:

- Require management and understanding for a broad spectrum of areas in biology: functional genomics, mammalian genetics, bioprocessing, bioinformation systems, genome analysis and systems modeling, protein structure prediction, risk and toxicological analyses, regulatory analysis, advanced biomedical science and technology, and bio-micro-electromechanical systems.
- Require ability to project a vision for the future of biological sciences based on a broad working knowledge of biology and allied sciences and technologies.
- Have responsibility for maintaining and developing productive relations with DOE sponsors and external sponsors.
- Be responsible for maintaining productive internal relations within the Laboratory, across divisions, programs and various sites and functions.

Position requires an advanced technical degree with extensive training and experience in the biological sciences; proven ability to plan, organize and manage activities of a major organizational unit; working knowledge of policies and guidelines that relate to administration and management of complex R&D organizations; and excellent human relations skills.

Qualified candidates are invited to send their resume, indicating position title and a list of three references, to: Waldean Richardson, Oak Ridge National Laboratory, PO Box 2008, Oak Ridge, TN 37831-6124; or email: richardsonwg@ornl.gov

Additional information is available at www.ornl.gov and www.lsd.ornl.gov

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IMMUNOLOGY

THE J. DAVID GLADSTONE INSTITUTES

HIV Immunologist

GLADSTONE INSTITUTE OF VIROLOGY AND IMMUNOLOGY
UNIVERSITY OF CALIFORNIA SAN FRANCISCO

M.D. and/or Ph.D. scientists with demonstrated research accomplishments in the of HIV immunology are invited to apply for a faculty position at the Assistant Investigator level within the Gladstone Institutes, and a comparable Assistant Professorship at UCSF. The successful candidate will receive salary and research support from the Gladstone Institutes and also will have a unique opportunity to develop a program focusing on HIV-1 immunopathogenesis and new approaches to immune reconstitution in HIV infected patients.

Please submit a curriculum vitae and the names of three references to:

Chair, Immunologist Search Committee
Gladstone Institute of Virology and Immunology
UCSF, P.O. Box 419100
San Francisco, California 94141-9100.

On the internet: http://gladstone.ucsf.edu

The Gladstone Institutes and UCSF are affirmative action/equal opportunity employers. Gladstone and the University undertake affirmative action to assure equal employment opportunity for underutilized minorities and women, for persons with disabilities, and for Vietnam-era veterans and special disabled veterans.

The **Intramural Research Program** of the National Institute of Arthritis, and Musculoskeletal and Skin Diseases, National Institutes of Health, invites applications for **two tenure-track investigator positions** to direct research programs related to 1) cartilage biology in the Developmental Biology Section, and 2) skeletal tissue engineering in the Tissue Engineering Section, of the newly created Cartilage Biology and Orthopaedics Branch. Candidates should have a Ph.D. and/or M.D. degree with an established research program and excellent publication record. We are seeking independent and interactive individuals who apply contemporary molecular, cellular, and/or engineering principles to investigate chondrogenesis, cartilage growth and maturation, and/or the regeneration of cartilage. Areas of expertise in growth factor function, mesenchymal stem cells, extracellular matrix biology, differential gene expression profiling, biomaterial design, and cellular mechanobiology are particularly appropriate. The successful candidates will be provided with the resources for a vigorous program. The research programs of the Cartilage Biology and Orthopaedics Branch include skeletal development, musculoskeletal diseases, and tissue engineering, with specific emphasis on translational research. The Intramural Research Program also has active research programs in genetics related to inflammation, cellular signal transduction, muscle and skin biology, and structural biology. Excellent opportunities exist for collaborations within the Branch and with other intramural basic and clinical scientists.

Applicants should forward their curriculum vitae, bibliography, a statement of research interests, and the names of three references to:Dr. Rocky Tuan c/o Scott Sigley,NIAMS, HRMB/Building 31, Room 4C13 31 Center Drive, MSC 2350 Bethesda, MD 20892
E-mail: ss403p@nih.gov
Applications must be postmarked by May 24, 2002

NIH is an Equal Opportunity Employer

The **Intramural Research Program** of the National Institute of Arthritis and Musculoskeletal and Skin Diseases, National Institutes of Health, invites applications for a **tenure/tenure-track investigator position** to direct a research program related to the basic biological mechanisms of cartilage development and growth in the Developmental Biology Section of the newly created Cartilage Biology and Orthopaedics Branch. Candidates should have a Ph.D. or M.D. degree with an established research program and exceptional publication record. We are seeking an independent and interactive individual who applies molecular and cellular techniques to the investigation of the regulation of chondrogenesis, and the maturation of chondrocytes. Areas of expertise in cell cycle regulation, apoptosis, growth factor function, cartilage matrix biology, and differential gene expression profiling are particularly appropriate. The successful candidate will be provided with the resources for a vigorous program. The research programs of the Cartilage Biology and Orthopaedics Branch include skeletal development, musculoskeletal diseases, and tissue engineering, with specific emphasis on translational research. The Intramural Research Program also has active research programs in genetics related to inflammation, cellular signal transduction, muscle and skin biology, and structural biology. Excellent opportunities exist for collaborations within the Branch and with other intramural basic and clinical scientists.

Applicants should forward their curriculum vitae, bibliography, a statement of research interests, and the names of three references to:Dr. Rocky Tuan c/o Scott Sigley,NIAMS, HRMB/Building 31, Room 4C13 31 Center Drive, MSC 2350 Bethesda, MD 20892
E-mail: ss403p@nih.gov
Applications must be postmarked by May 10, 2002

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IMMUNOLOGY

SCIENTIST-Cellular Immunology

Dendreon Corporation is a public biotechnology company dedicated to the discovery & development of novel products for the treatment of cancer through its innovative manipulation of the immune system.

We are currently recruiting a Scientist to work in our Cellular Immunology group. You will be involved in planning and conducting research in the field of in vitro and in vivo immunology of T and B cell responses. If you are experienced in the use of basic and applied cellular immunology techniques and have a scientific track record in studying cellular immunology and/or cancer biology, we'd like to see your curriculum vitae. A Ph.D. in Immunology or related discipline with at least 3 years of postdoctoral experience is required. Also highly preferred experience in cell transfections and basic molecular biology.

We offer a competitive salary & benefits package, including bonus, matching 401(k) & stock option programs. Send your CV to: **Dendreon Corporation, HR Mgr. FAX: 206-256-0571** or **email to: hr@dendreon.com**

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Become a member of an elite research and development community involved in basic and applied scientific research and advanced technological development for tomorrow's Navy and for the Nation.

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- Executive direction and technical leadership in the development of strategic plans associated with R&D programs developing all scientific and technical elements of atmospheric forecasting systems and assessing atmospheric effects on Naval systems.
- Principal consultant to the Navy, other agencies, and nations on developing applications for the R&D programs under his/her cognizance.
- Applicants should be recognized as national/international authorities and should have planned and executed difficult programs of national significance that show outstanding attainments in their field of research.
- Visit NRL's Executive Search website at **http://www.jobs.nrl.navy.mil/** for application procedures.
- Receipt by 20 May 2002 is required.
- For further information contact **Mary Branick, Human Resources Office, NRL at Mbranick@hro.nrl.navy.mil or (202) 767-8306.**

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National Eye Institute
Postdoctoral position
Ocular Neovascularization

A postdoctoral position is available immediately for a Ph.D. or M.D. to study the molecular biology of wound healing and neovascularization of the retina. The position will offer the opportunity for an individual to apply various cell biologic, immunohistochemical and molecular techniques to study animal models of ocular neovascularization and to learn methods of viral gene delivery. A background in molecular and cell biology is required. Prior experience in the study of neovascularization is desirable. Candidates should have a Ph.D. or M.D. with less than 5 years of postdoctoral experience and must be either a U.S. citizen or permanent resident. A curriculum vita and the names of three references should be sent to:

Karl G. Csaky, M.D., Ph.D.
Gene Therapy Section
Building 10 10N112
National Eye Institute
National Institute of Health
Bethesda, Maryland 20892-1857
E-mail: kcsaky@helix.nih.gov
Telephone: 301-402-0896
Fax: 301-480-1122

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SCIENCE and ENGINEERING

CHAIR OF MATERIALS SCIENCE AT EXTREME CONDITIONS

The University invites applications for the Chair of Materials Science at Extreme Conditions. This is a new Chair, funded initially by the Leverhulme Trust, to establish a wholly new research effort in the University of Edinburgh on materials synthesis under extreme conditions. This grant, worth £2m over 8 years, also creates 3 additional academic posts in complementary aspects of materials synthesis under extreme conditions. Further support for world class research in this field has been provided by a Joint Infrastructure Fund award of £7m to establish a 'Centre for Science at Extreme Conditions' (CSEC). Our success reflects a strong international presence in several areas of extreme conditions science, embracing groups in Physics, Chemistry, Geology, Biological Sciences and Engineering.

Candidates for the Chair should have an outstanding research record in extreme conditions synthesis, or in innovative chemical or materials synthesis with high potential for exploitation of extreme conditions. In addition, the successful candidate will be expected to provide academic leadership both in CSEC, and in at least one of the schools brought together through CSEC. Informal enquiries may be addressed to Professors Andrew Harrison. E-mail: a.harrison@ed.ac.uk or Christopher Hall. E-mail: christopher.hall@ed.ac.uk or Richard Nelmes. E-mail: r.j.nelmes@ed.ac.uk

The salary will be in the professorial range. Please quote REF: 311291SI.
Closing date: 3 May 2002.

Apply online, view further particulars or browse more jobs at our website.
Alternatively, telephone the recruitment line on 0131 650 2511.

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Imperial College

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Department of Biological Sciences

NERC Centre for Population Biology

We are looking to appoint two postdoctoral researchers:

1. Ecotron Ecologist

The Ecotron is a unique controlled environment facility based at the NERC Centre for Population Biology, Silwood Park. The CPB has just completed a two-year experiment funded by the NERC Soil Biodiversity Thematic Programme. A new experiment will begin after Easter this year and will investigate interactions between community and ecosystem responses to global change. This experiment will separate responses to global change mediated by effects on species physiology and community composition. We are looking for an ecosystem/community ecologist who will join the current Ecotron team led by Dr Mark Bradford in developing this experiment, as well as initiating his or her own lines of research. The successful candidate is likely to have a background in plant or ecosystem ecology.

2. Population or Community Ecologist

We are seeking an experimental or theoretical ecologist to develop a research programme in population, community or ecosystem ecology. We have an open mind as to the precise scientific questions, and study systems employed but the research must be relevant to CPB's broad Research Programme areas (see our website: http://www.cpb.bio.ic.ac.uk). The successful candidate will be expected to develop their own independent research programme, though probably with strong links to one or more existing population biology projects at CPB.

For both positions you should have a PhD with a relevant background plus ideas for developing your own projects to address important questions in relevant areas.

Initial contracts are until the end of March 2004 with possibilities for renewal. Salary within the RA1A scale: (£17,626 - £26,491). We are aiming for a start date as soon as possible.

For further details see our website: http://www.cpb.bio.ic.ac.uk or contact Miss Karen Lingham, NERC Centre for Population Biology, Imperial College at Silwood Park, Ascot, Berkshire SL5 7PY, UK. +44 (0)20 7594 2346 (tel), +44 (0)1344 873173 (fax).

Closing date: 6 May 2002.

The College is committed to equality of opportunity.

Faculty Positions
Bioinformatics/Computational Biology
The College of Medicine
at the
University of Arkansas for Medical Sciences

UAMS
UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

The University of Arkansas for Medical Sciences (UAMS) College of Medicine is undergoing expansion in the areas of functional genomics, genetics, proteomics and bioinformatics. Applications for tenure-track faculty positions at the ASSISTANT/ASSOCIATE/FULL PROFESSOR levels are invited from individuals with either the Ph.D. and/or M.D. degree and cross-disciplinary training in the computational and biological sciences. Candidates for junior positions must demonstrate the potential for establishing a vigorous, independent research program. Candidates for senior positions must have an outstanding publication record and substantial success in obtaining peer-reviewed grant support. We are particularly interested in individuals who are willing to help foster collaborative interactions and participate in the development of a joint graduate program in bioinformatics with the University of Arkansas at Little Rock. Successful candidates will be appointed in the appropriate academic department within UAMS College of Medicine.

Applicants should submit curriculum vitae, short statements of research and teaching interests, and names of three references to: Chair, Bioinformatics/Computational Biology Search Committee, University of Arkansas for Medical Sciences, 4301 West Markham Street, Slot 818, Little Rock, AR 72205-7199.

For full consideration, applications should be received by May 31, 2002.

UAMS is an Affirmative Action/Equal Opportunity Employer.

CAREER IN BIOTECHNOLOGY

Research Scientists

(Biomedical, Animal, Environmental or Agricultural Sciences)
(Based in Hong Kong)

A life sciences company, member of a leading international commercial group, dedicated to improving the environment and the quality of human life is recruiting a number of scientists specializing in biomedical, animal, environmental or agricultural sciences to cater for our needs of high-quality research.

- ☐ Key responsibilities include conducting experiments, collecting data and developing products;
- ☐ A Master's, Ph. D/M.D degree with excellent research record;
- ☐ A minimum of 3 years' research and/or industry experience in any one of the following areas:
  - ✧ Aquaculture, Animal husbandry, Animal physiology
  - ✧ Biomedicine, Biotechnology, Pharmaceuticals;
  - ✧ Wastewater Treatment, Aquatic Sciences, Environmental Microbiology
  - ✧ Soil and Plant Sciences, Yeast Biology
- ☐ Excellent fluency in English and Chinese (include Putonghua) is a MUST. Frequent travel to the Mainland of China is required.

Attractive remuneration will be offered to the right candidates. Please send your full CV to the Human Resource Manager, GPO Box 4333, Hong Kong or email **bcareer_hk@yahoo.com.hk**.

Chief, Laboratory of Molecular Carcinogenesis

National Institute of Environmental Health Sciences
National Institutes of Health
Research Triangle Park, North Carolina

The National Institute of Environmental Health Sciences (NIEHS) (http://www.niehs.nih.gov) in Research Triangle Park, North Carolina, seeks a senior tenured investigator to direct the Laboratory of Molecular Carcinogenesis of the Environmental Diseases and Medicine Program, Division of Intramural Research.

The Challenge:

- Develop and maintain strong personal research effort in the general area of molecular carcinogenesis, particularly as it relates to defining the critical target genes and cellular mechanisms in carcinogenesis and understanding how chemicals act upon these genes and cellular processes to influence cancer development.
- Provide overall leadership for the existing principle investigators within the Laboratory of Molecular Carcinogenesis, who study cell adhesion and migration, regulatory proteins, eicosanoid biochemistry, hormones and cancer, molecular and genetic epidemiology, metastasis, molecular toxicology and molecular mechanisms of gene regulation and metabolism.
- Recruit talented investigators to the Laboratory of Molecular Carcinogenesis and provide a focus for collaborations within the Institute.

The Opportunity exists for an outstanding senior scientist to establish a cutting edge intramural research program in molecular carcinogenesis and direct and expand the efforts of the Laboratory of Molecular Carcinogenesis in this critical area of environmental science. Excellent space and research support are available. Levels of appointment, salary and research support will be commensurate with the experience and qualifications of the candidate.

The Candidate should be a senior investigator with an international reputation in a specific area within the broad context of molecular carcinogenesis and it's relationship to the environment. Possible specialized disciplines include but are not limited to molecular biology, cell biology, biochemistry, biophysics, endocrinology and oncology. The successful candidate will have an outstanding publication record and proven history of research leadership.

Candidates must have a M.D., Ph.D. or equivalent degree in an environmental health science discipline. Salary is commensurate with experience and level of accomplishments and will range up to $200,000. A recruitment bonus of up to 25% of base pay or a relocation bonus of up to 25% of base pay may also be available. For additional information on scientific issues, contact Dr. Thomas Kunkel, Search Committee Chair, at 919-541-2644 or kunkel@niehs.nih.gov. Applications from women and minorities are particularly welcome. A complete application includes the following: Curriculum vitae, list of publications, plan for future research and three letters of reference. Please send the complete application package to the following address postmarked by June 14, 2002.

Ms. Tammy Locklear (Vacancy Number HNV02-15)
NIEHS Human Resource Management Branch
P.O. Box 12233, Maildrop NH-01
Research Triangle Park, NC 27709
Phone: (919) 541-3317; e-mail locklea1@niehs.nih.gov

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Replidyne

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Replidyne is dedicated to discovering anti-infective agents with a novel mechanism of action—blocking DNA replication. Our initial focus will be on the discovery and development of novel antibacterial drugs. We have recently completed a significant round of venture funding and are committed to becoming the leading biotechnology company in the world conducting investigations of DNA replication. We are searching for motivated scientists who want to grow professionally while conducting state-of-the-art research on the mechanisms of DNA replication and discovering novel agents to cure human disease. We are creating a stimulating goal-driven, academic atmosphere where publication of quality work will be supported and encouraged. Replidyne offers competitive salaries, stock options, benefits and an attractive working and living environment. A state-of-the-art facility is being completed in the scenic high-technology corridor midway between Boulder and Denver on the front range of the Rocky Mountains. Positions up to director-level or equivalent will be considered in the following areas:

Medicinal Chemistry/Chemo-informatics—Candidates should have a Ph.D. and significant industry experience in one of the following areas: chemical screening library selection and management, high-throughput organic synthesis, medicinal chemistry, chemo-informatics, and lead selection and optimization. Preference will be given to candidates with demonstrated leadership ability.

Biochemistry—Candidates should have a Ph.D. and significant experience in enzyme purification, characterization and mechanistic investigations. Preference will be given to candidates with demonstrated leadership ability and experience in complex multi-protein systems, directing studies based on functional reconstitution assays.

Other Positions—Please see our ad in the March 29 issue of Science.

Applicants should sent their curriculum vitae, list of 3 or more references, and a description of their experience and career objectives to:
Replidyne, Inc., Personnel Dept., 1450 Infinite Drive, Louisville, CO 80027

Angiogenesis Research Center
Dartmouth Medical School

Postdoctoral Positions

NIH-funded postdoctoral positions are available in the following laboratories in the Center:

Arie Horowitz, D.Sc.
- PDZ-dependent complex assembly and G-protein signaling in endothelial cells.

Justin Pearlman, MD, Ph.D.
- Magnetic resonance imaging of angiogenesis - animal and clinical studies

Mark J. Post, MD, Ph.D.
- Gene and protein therapy studies of coronary and peripheral angiogenesis in animal models
- Role of jagged in post-angioplasty restenosis

Nicholas W. Shworak, MD, Ph.D.
- Enzymatic regulation of heparan sulfate matrix synthesis
- Antithrombin signaling in endothelial cells

Michael Simons, MD
- FGF signaling in endothelial cells
- Syndecan-4 regulation of endothelial cell growth & differentiation

The Angiogenesis Research Center provides state of the art research facilities and a collegial working environment. Please forward your CV and a cover letter stating scientific interests and experience to: **Sharon Kavanaugh, Administrative Assistant, Angiogenesis Research Center, HB 7504, Dartmouth Medical School, One Medical Center Drive, Lebanon, NH, 03756; Phone: (603) 650 0820; Fax: (603) 653 0510; e-mail: Sharon.Kavanaugh@Dartmouth.EDU**

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Maxygen is the leader in the design and application of directed evolution to create novel protein pharmaceuticals and therapeutic vaccines that address clinically unmet medical needs using our proprietary Molecular Breeding™ technologies.

Department of Early Drug Discovery is currently expanding its activities and is therefore hiring experienced cell biologists/pharmacologists and protein chemists. The department develops Maxygen's protein pharmaceutical projects from idea to *in vivo* proof-of-concept by integrating molecular breeding with high throughput screening, high-quality cell-based secondary assays, protein purification and protein characterization.

Assay Scientist – Job #PP-254

Primary tasks
- Develop high throughput screening assays
- Develop secondary assays for characterization of lead candidates
- Design and oversee high throughput screens

Qualifications:
- Ph.D. or equivalent experience in cell biology/pharmacology
- Expert in cell based assays
- Experience with mammalian cell cultivation in bioreactors
- Experience in project management or group management
- Experience with pre-clinical development of protein pharmaceuticals
- Experience from in the pharmaceutical industry is preferred

Protein Purification Scientist – Job #PP-255

Primary tasks:
- Develop and manage infrastructure for protein purification
- Develop and implement protein purification processes
- Purify and characterize lead candidates
- Develop methods for high throughput protein purification

Qualifications:
- Ph.D. or equivalent experience in biochemistry/protein chemistry
- Expert in all aspects of classical protein purification
- Experience in project management or group management
- Applicants with experience in the pharmaceutical industry and knowledge about pre-clinical development of protein pharmaceuticals are preferred

Assay Research Assistant – Job #PP-256

Primary tasks:
- Implement and run medium and HTP screensing assays
- Manage cell banks

Qualifications:
- B.S. or M.S. in biology/biochemistry
- Extensive mammalian cell culture experience
- FACS experience
- Experience with ELISA and other binding assays

Protein Purification Research Assistant – Job #PP-257

Primary tasks:
- Purify lead candidates
- Implement high throughput protein purification
- Maintain protein purification facility

Qualifications:
- B.S. or M.S. in biochemistry/protein chemistry
- Extensive experience with protein purification
- Experience with ELISA and other binding assays

We expect you to be a dynamic and results-focused team player, who works systematically on your tasks and who is able to motivate colleagues and team members. Maxygen offers a generous and competitive compensation and benefits program with exceptional rewards for effort, innovation and results.

For further information please visit our website **www.maxygen.com**. Please send your resume indicating job# to, **jobs@maxygen.com** or **Maxygen Inc., Human Resources, 515 Galveston Drive, 94063 Redwood City, CA. 94063**. EOE

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CEPTYR, Inc., based in Bothell, Washington, is a growing biotechnology company focused in the field of signal transduction on the discovery of pharmaceuticals for treatment of metabolic disorders, immunosuppression and cancer using innovative assay technology and protein tyrosine phosphatase (PTP) targets. CEPTYR seeks candidates for the following positions in our Chemistry group.

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This individual will be responsible for directing the activities of the medicinal chemistry, analytical chemistry, chemistry development, lead development, product improvement, discovery and intellectual property project teams. They will also participate in clinical research as it pertains to a project or area of expertise, and the evaluation of outside technology. This person will manage corporate collaborations pertaining to chemistry projects. Requires a Ph.D. in organic chemistry with a minimum of 8 years scientific management experience, including 5+ years within the pharmaceutical/biotechnology industry. Also requires a proven track record showing discovery of small molecule therapeutic agents progressing through to development stages. A leader in the field with sustained performance, accomplishments, and a strong record of publications. Demonstrated technical expertise, scientific creativity, and independent thought. Must be known for an ability to collaborate with others and be familiar with crystallography and rational drug design.

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Candidates with a Ph.D. in organic chemistry and a minimum of 2+ years experience in the pharmaceutical/biotechnology industry are encouraged to apply. The individuals will be expected to contribute towards the development of structure-activity relationships for a particular lead series, and engage in the design and synthesis of potential drug candidates based on the available biological and structural information. Successful candidates will have experience with small molecule drug discovery programs and must demonstrate the ability to work collaboratively with others. CEPTYR offers an excellent compensation and benefits package.

For consideration, please send your resume to us at **career@ceptyr.com** or by **fax to 425-485-9026**. Our address is: **Human Resources, CEPTYR, Inc., 22215 26th Ave. SE, Bothell, WA 98021. www.ceptyr.com**

CEPTYR is an Equal Opportunity Employer.

NIMH
National Institute of Mental Health

Post Doctoral Fellowship in Neuroimaging Research

The Clinical Brain Disorders Branch of the NIMH is accepting applications for a post-doctoral fellow in the Unit on Clinical Neuroimaging. This Unit conducts neuroimaging research using fMRI to map brain activity with a focus on brain circuits and genetic mechanisms subserving higher cognitive function and emotion processing in healthy volunteers and patients with neuropsychiatric disorders. Through pharmacological and genetic studies the Unit is also exploring the effects of monoamines on these brain circuits and variations in genes that affect the neurotransmitters involved in these circuits.

Candidates with a Ph.D. and/or M.D. (preferably with residency training in Psychiatry and/or Neurology) and an interest in functional neuroimaging techniques are invited to apply. Contact: **Venkata S. Mattay, MD, telephone 301-435-4594; email: vsm@helix.nih.gov**.

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Saint Francis Hospital and Medical Center
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Requires PhD in Immunology or related field with more than 2 years of post-doctoral experience in vaccination, mammalian cell culture, cell fusion, flow cytometry, ELISA and functional immunoassays. Ability to devise experimental strategies and execute them in a hands-on fashion to produce goal-oriented results is essential.

To apply, send resume, indicating **job #D5449-CH**, to **mohammad_luqman@chiron.com**.
For more information, please visit

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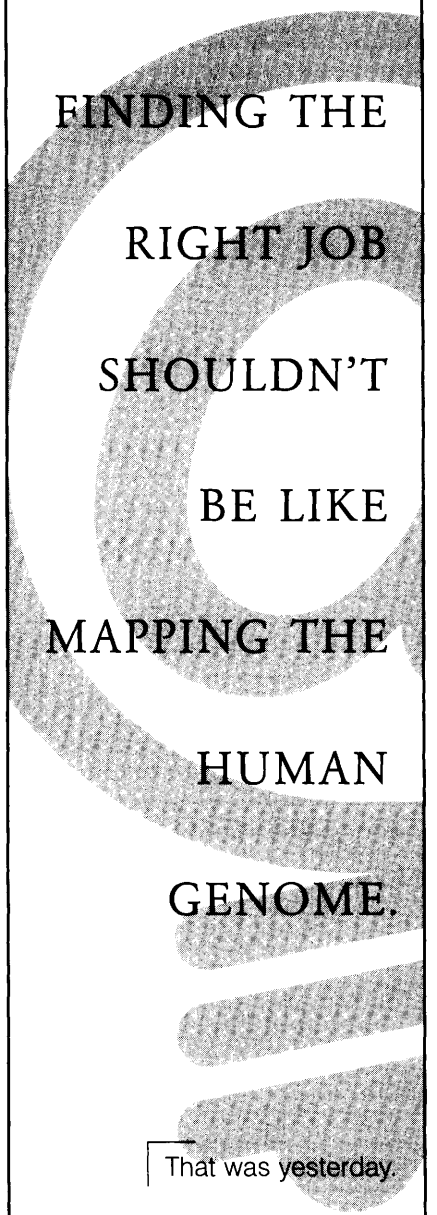

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CHIEF OF THE DIVISION OF HEMATOLOGY/ONCOLOGY MEDICAL COLLEGE OF GEORGIA

The Department of Medicine, Medical College of Georgia (MCG), Augusta, Georgia, is recruiting a Section Chief for the Division of Hematology/Oncology. We are seeking an experienced physician with an active academic background in either hematology or oncology. The desired candidate is one who will be able to lead a division with a mission of excellent patient care, teaching and research. The candidate should be a leader who has a vision to build an excellent, well-balanced academic Hematology/Oncology division. There is strong institutional support for the division. The MCG Hematology/Medical Oncology Program provides patient care services through the Comprehensive Cancer Center opened in 1997, the Comprehensive Sickle Cell Center, the Adult Hemophilia Clinic, Bone Marrow Transplantation Program, and the Clinical Trials Development Program. Clinical research is offered through participation in both ECOG and NSABP clinical trials. Competitive candidates will demonstrate a track record of success in research administration and acquisition of extramural funding. Multiple opportunities are available for professional development and academic research. MCG has the Institute of Molecular Medicine and Genetics (IMMAG) and the Vascular Biology Center that are capable of providing opportunities for collaborative work in the areas of clinical and basic science research. Interested candidates may submit a CV to: **Dr. Walter J. Moore, Chief, Section of Rheumatology, BI-5086, Medical College of Georgia, Augusta, Georgia 30912-3125; Email: wmoore@mail.mcg.edu**. *The Medical College of Georgia is an Equal Opportunity/Affirmative Action/Equal Access Employer.*

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For consideration, please send resume and salary requirements, including job title, to one of the following: **dadechem@dadebehring.com or FAX: (302) 631-0348; or mail to: Dade Behring, Inc., P.O. Box 6101, M/S 517, Newark, DE 19714-6101.**

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Please send letter of application, curriculum vitae and bibliography to:

Richard Lewis Huganir, Ph.D.
Chairman, Molecular Biology and Genetics Search Committee
Johns Hopkins University, School of Medicine
720 Rutland Avenue, Room 100 SOM
Baltimore, MD 21205-2196
Or send via e-mail to: **dlabuda@jhmi.edu**

Applications should be submitted by May 31, 2002.

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RESEARCH FELLOW
Transplant Biology Program
Rochester, Minnesota, U.S.A

A postdoctoral research position is available in the laboratory of Dr. Amy Tang of the Transplant Biology Program at Mayo Clinic in Rochester, Minnesota, (ref *Cell* **90:**459-467, 1997; *Genetics* **148:**277-286, 1998; *Development* **128:**801-813). Applicants must have a Ph.D. and/or M.D. and should have experience in the fields of signal transduction, molecular biology, biochemistry, genetics, or pharmacogenomics. Experience with Drosophila, forward and reverse genetic screens, and mutant analyses is highly desirable.

Salary will be determined by the successful candidate's experience. There is an attractive benefit package. Mayo Clinic is a not-for-profit organization. Mayo integrates research with clinical practice and education in a multi-campus environment. For further information please visit **http://www.mayo.edu/research/.**

Applications, including curriculum vitae and bibliography, summary of past accomplishments, and the names of three references, should be sent to:

Dr. Amy Tang
Transplantation Biology
Medical Sciences 2-85
Mayo Clinic, 200 First Street SW
Rochester, MN 55905
507-538-1878
Tang.Amy@mayo.edu

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POSTDOCTORAL RESEARCH

THE WISTAR INSTITUTE 1892

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 full-time, year-round opportunities.

Anti-idiotypic Antibody Vaccines. Postdoctoral position for immunologist to work on anti-idiotypic antibody vaccines (mimicking carbohydrate) in animal models with a team of cancer immunologists and molecular biologists. Candidate must have strong background in cellular immunity. Please include description of research experience, along with CV, publication record and references. Reply to **Dr. Dorothee Herlyn (dherlyn@wistar.upenn.edu).**

Regulation of Epstein-Barr Virus Latency. Immortalization of human B-lymphocytes by EBV depends on the establishment of a stable extrachromosomal replicon that maintains a stable copy number and strict pattern of gene expression. We are studying the viral and cellular proteins that regulate the chromatin structure, cell-cycle dependent replication, DNA damage checkpoint response, and plasmid maintenance of EBV minichromosomes. In a separate project, we are studying how B-lymphocyte growth signals regulate the switch from latent to lytic gene expression of the viral minichromosome. Reply to **Dr. Paul Lieberman (lieberman@wistar.upenn.edu).**

Biochemical Mechanisms of Gene Regulation in Human Cancer. Positions are available to study the MYC, p53 and E2F transcription factors. Recent work has shown that these proteins regulate the transcription of downstream target genes via the recruitment of multi-protein cofactor complexes, which alter chromatin structure. Our current efforts are aimed at understanding how these complexes are assembled and recruited by MYC, p53 and E2F, and at defining the biochemical changes in chromatin structure induced by these complexes at target gene loci. Candidates with training in molecular biology and/or biochemistry are preferred. **Reply to Dr. Steven McMahon (smcmahon@wistar.upenn.edu).**

Chromatin-Mediated Gene Silencing and the Control of Cell Proliferation. Positions are available immediately to study the molecular mechanisms utilized by mammalian cells to stably silence gene expression and to elucidate how silencing is maintained during cell growth and organismal development. The KRAB domain-Zinc-finger protein superfamily of repressors has been developed as a model system (see Genes & Dev. 10:2067, 1996; J. Mol. Biol. 295:1139, 2000; Genes & Dev. 15:428, 2001, Genes & Dev. In press, April 15, 2002) and has led to insights into the interplay between histone deacetylation, methylation and formation of heterochromatin. We are looking for ambitious candidates with training in molecular biology and biochemistry. Reply to **Dr. Frank J. Rauscher III (rauscher@wistar.upenn.edu).**

Viral & Immunopathology Studies. Position available to investigate viral and immunopathology studies centered on HIV-1 infected patient -derived material, treatment interruption strategies, and in vitro models of macrophage and T-cell infection by HIV-1 (See Proc. Natl. Acad. Sci 96, 5215, 1999; J. Infect. Dis. 182, 766, 2000). Experience in HIV-1 research, cellular immunology, & cytokine networks preferred. Reply to **Dr. Luis Montaner (montaner@wistar.upenn.edu).**

Antigen Presentation. Position available to study antigen presentation, IL-12, microarray gene expression and inflammation in human and murine models systems. Experience in cellular immunity, infectious disease murine models and dendritic cells preferred (See J. Immunol. 166:7504-7513). Reply to **Dr. Luis Montaner (montaner@wistar.upenn.edu).**

Successful candidates will have a Ph.D. and/or M.D./Ph.D. in the biological sciences. Please send a CV and three letters of reference to the **Human Resources Dept., Attn: (appropriate faculty member), The Wistar Institute, 3601 Spruce Street, Philadelphia, PA 19104.**

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DEVELOPMENTAL NEUROBIOLOGIST (open rank; tenure track): The Department of Biomedical Sciences at Colorado State University (**website: http://www.cvmbs.colostate.edu**) seeks a Developmental Neurobiologist for research and teaching. The Department's strengths lie in its two University Programs of Research and Scholarly Excellence: The Molecular, Cellular, and Integrative Neuroscience Program and the Animal Reproduction and Biotechnology Laboratories. Candidates will be expected to establish a vigorous, funded research program; help establish a graduate course; and contribute to teaching in the undergraduate, graduate, or professional veterinary programs of the Department. Applicants must have a Ph.D., D.V.M., M.D., or equivalent degree. Postdoctoral experience and evidence of excellence in teaching and research are highly desirable. A letter of application, curriculum vitae, and names of three references should be sent electronically or by post to:

Robert J. Handa, Ph.D.
Developmental Neurobiology Search Committee
Department of Biomedical Sciences
College of Veterinary Medicine
and Biomedical Sciences
Colorado State University
Fort Collins, CO 80523
E-mail: robert.handa@colostate.edu

Review of applications will begin June 1, 2002, and will continue until a suitable candidate is found. *Colorado State University is an Equal Employment Opportunity/Affirmative Action Employer. Women and minority candidates are especially encouraged to apply.*

EXECUTIVE DEAN OF MATHEMATICS AND SCIENCE

McHenry County College invites applications for Executive Dean of Mathematics and Science. This position is one of four Executive Deans reporting to the Vice President for Academic Affairs at this fast-growing Chicago suburban campus serving over 10,000 credit and noncredit students per semester. This position will lead faculty and staff in support of McHenry County College's strategic plan serving a changing campus and community. Minimum requirements include a Master's degree in one of the disciplines of the division, administrative experience, and four years of full-time teaching experience. Applications will be accepted and reviewed until the position is filled. Candidates should submit a résumé and three references to: **McHenry County College, Nancy Loomis, AVP Human Resources, 8900 U.S. Highway 14, Crystal Lake, IL 60012.**

For additional information, visit **website: http://www.mchenry.cc.il.us** or **Telephone: 815-455-8737.** *MCC is an Equal Opportunity Employer committed to diversity in its college community.*

BICHEMISTRY, CELL, AND MOLECULAR BIOLOGY
Texas Tech University Health Sciences Center

The Department of Cell Biology and Biochemistry has a tenure-track position available for an **ASSISTANT** or **ASSOCIATE PROFESSOR.** Consideration will be given to candidates' ability to complement current strengths of the Department, which include reproductive biology, cellular differentiation, and cancer (visit **website: http://www.remedy.ttuhsc.edu/cbb/** for additional information). However, quality of candidates' scientific achievements is more important than specific research area. Candidates for Associate Professor must have a strong record of research funding. To apply, send curriculum vitae, statement of research interests, and names and addresses of three references to: **Professor Charles H. Faust, Search Committee Chair, Department of Cell Biology and Biochemistry, TTUHSC, 3601 Fourth Street, Lubbock, TX 79430.** Application materials can also be submitted as PDF files to **e-mail: pam.roddy@ttmc.ttuhsc.edu.** Deadline for receipt of applications is July 1, 2002.

POSITIONS OPEN

The Department of Pharmacology, Medical Sciences Campus, University of Puerto Rico at San Juan, has a tenure-track position of **ASSISTANT PROFESSOR** in the area of endocrine pharmacology including molecular biology. For information, contact: **Dr. Walmor De Mello; e-mail: wmello@rcm.upr.edu.**

ENVIRONMENTAL MOLECULAR SCIENCE/ENGINEERING AT YALE

The Environmental Engineering Program at Yale University invites applications for an **ASSISTANT PROFESSOR** position in environmental molecular science starting January 1, 2003. This position is part of the ongoing initiative at Yale University to strengthen the interdisciplinary Environmental Engineering Program, which involves engineering and science departments as well as the School of Forestry and Environmental Studies. Candidates are expected to have expertise in environmental molecular science involving microbial or chemical processes in engineered and/or natural aquatic systems. The successful candidate will be expected to teach undergraduate and graduate courses in environmental engineering and related engineering science, advise graduate students, and develop a creative and dynamic externally funded research program. Nominations and applications with a detailed résumé, a description of research and teaching interests, and names and addresses of at least four references should be sent to: **Chair, Environmental Engineering Search Committee, Department of Chemical Engineering, Environmental Engineering Program, Yale University, P.O. Box 208286, New Haven, CT 06520-8286. Website: http://www.eng.yale.edu/environmental.** Review of applications will begin June 2002 and will continue until the position is filled. *Yale University is an Affirmative Action/Equal Opportunity Employer. Women and members of minority groups are encouraged to apply.*

RESEARCH SCIENTIST

The Mycobacteria Research Laboratories (MRL) at Colorado State University is seeking a **RESEARCH SCIENTIST** to participate in and help manage the NIH-funded Tuberculosis Research Materials Program. Applicants must have a Ph.D. or equivalent degree and should have a background in bacterial physiology, purification of biological macromolecules or production of recombinant proteins, and an interest in the study of mycobacterial diseases. Research facilities within the MRL include an advanced BSL III facility and state-of-the-art equipment for protein purification and analysis. Send curriculum vitae, names of three references, and statement of research interests to: **Ms. Charmaine Matheson, Department of Microbiology, Colorado State University, Fort Collins, CO 80523.** Salary is commensurate with experience. For full consideration, the deadline for applications is May 13, 2002. *CSU is an Equal Employment Opportunity/Affirmative Action Employer.*

The Center for Scientific review, NIH, announces an opening for a **SCIENTIFIC REVIEW ADMINISTRATOR** for a study section within the Biochemical Sciences Integrated Review Group, the Division of Molecular and Cellular Mechanisms. The individual must have a broad knowledge of the area of biochemistry with a strong background in protein and nucleic acid chemistry, biophysical chemistry, or enzymology. The salary will be commensurate with experience. The applicant must have a Ph.D. or equivalent degree (or a combination of equivalent training and experience), Postdoctoral independent research and administrative experience, and a record of research accomplishment. A recruitment/relocation bonus may be available. For further information, **e-mail: bengaliz@csr.nlh.gov.** *NIH is an Equal Opportunity Employer. Selection for any position will be based on merit with no discrimination for nonmerit reasons such as race, color, sex, national origin, marital status, handicap, age, sexual orientation, or membership/nonmembership in an employee organization.*

POSITIONS OPEN

PHARMACOLOGIST
The University of Wyoming

The School of Pharmacy (**website: http://uwadmnweb.uwyo.edu/pharmacy/**) invites applications for a tenure-track faculty position at the level of **ASSISTANT PROFESSOR/ASSOCIATE PROFESSOR** of pharmacology. We seek an individual who employs molecular or cellular approaches to study the regulation of cardiovascular function in normal or disease states. The successful applicant is expected to develop an externally funded research program that complements existing areas of research: gene analysis of heart and brain after myocardial infarction, neural systems controlling blood pressure, hypoxia-sensing mechanisms, and dietary salt effects on blood pressure regulation.

Qualifications: Must have a Ph.D. (or equivalent), postdoctoral experience, and demonstrated expertise in the use of cellular/molecular approaches to study cardiovascular function. Approaches might include but are not limited to the use of transgenic and/or knockout animals in which genes are inactivated or substituted to provide information about CNS control of cardiovascular function; molecular pharmacology of receptor systems in brain, heart, or vasculature; and the effects of cardiovascular pathology on receptor structure and function, DNA microarray technology to study cardiovascular function.

The successful candidate will be expected to be a member of the NIH-funded Cardiovascular Center of Biomedical Research Excellence and contribute to teaching pharmacology to pharmacy students. The position also provides an opportunity to teach first-year medical and nursing students and to teach and direct graduate students in the Neuroscience Program and other interdisciplinary graduate programs.

Send a letter explaining your research interests, curriculum vitae, representative publications, and three letters of recommendation to: **Search Committee, Pharmacology Faculty Position, School of Pharmacy, University of Wyoming, Laramie, WY 82071.** Review of applications will continue until the position is filled.

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

UNIVERSITY OF FLORIDA

The Division of Nephrology at the University of Florida is seeking applicants for the Central Florida Kidney Center **EMINENT SCHOLAR** position. Applicants must have an established, nationally prominent program in basic science or clinical investigation. The successful candidate will be expected to develop an independent research program competitive for extramural funding. Generous start-up funds, laboratory space, and protected time are available. The environment offers outstanding core facilities and extensive opportunities for collaboration in both basic and clinical investigation. A clinical background is not an essential requirement. Salary and benefits commensurate with experience. This is a tenure-track position. Recruiting deadline date: June 1, 2002. Anticipated start date: October 1, 2002. Interested applicants should submit curriculum vitae and three letters of recommendation to: **Stephen L. Gluck, M.D., Chief, Division of Nephrology, Hypertension, and Transplantation, University of Florida, College of Medicine, Box 100224, 1600 S.W. Archer Road, Gainesville, FL 32610-0224.** *An Equal Opportunity/Affirmative Action Employer.*

RESEARCH ASSOCIATE POSITION
(PVN Number MP771)

Experienced Molecular Biologist/Biochemist for research involving cell culture, PCR, transfection, small animal surgery, membrane isolation, enzyme purification, HPLC, etc. Salary: $40,000 to $45,000 annually plus benefits. Submit résumé/names, addresses, and telephone numbers of three references to: **Dr. Kho Kashfi, Department of Physiology and Pharmacology, The CUNY Medical School, 138th Street and Convent Avenue, New York, NY 10031. E-mail: kashfi@med.cuny.edu.** *The CUNY Medical School is an Equal Opportunity Employer.*

THE J. DAVID GLADSTONE INSTITUTES
UNIVERSITY OF CALIFORNIA SAN FRANCISCO

Gladstone offers an exceptional trianing program for postdoctoral fellows, including rigorous scientific training, personalized attention and mentoring, and a rich research environment to allow our fellows to develop to the fullest of their abilities. Gladstone currently has the following postdoctoral fellow opportunities:

Postdoctoral Fellowship in the laboratory of Dr. Israel F. Charo to study chemokines and their receptors. Projects focus on the role of chemokines in the immune response, host defenses, and immunological aspects of atherosclerosis, and will make extensive use of knockout and transgenic mice. Candidates should have experience with molecular biology and immunology. Job #C02-01S

Postdoctoral Fellowship in the laboratory of Dr. Robert Mahley to study the role of the apoE protein in Alzheimer's disease. Job #C02-04S

Postdoctoral Fellowship in the laboratory of Dr. Robert Pitas to study mechanisms by which the apoE isoforms exert differential effects on lipid metabolism and on the development of neurological and cardiovascular disease. Experience in cell culture and lipid analysis a plus but not essential. Job #C01-08S

Postdoctoral Fellowship in the laboratory of Dr. Tony Wyss-Coray to research the molecular basis of neurodegeneration with an emphasis on Alzheimer's disease and cerebrovascular abnormalities. Specifically, we aim to manipulate key signaling pathways in vivo to - study the role of injury and inflammation in models of neurodegeneration and neuroprotection.Candidates should have experience with molecular biology and neuroscience. Job # N01-05S

Postdoctoral Fellowship in the laboratory of Eric Verdin to study the role of histone deacetylases in transcriptional regulation. Current work is focused on the HDAC3 complex, on the biology of class II HDACs, on the deacetylation of non-histone proteins and on the biology of human SIR2-like proteins. Candidates should have a strong background in molecular biology and/or protein biochemistry. Job #V02-09S

Postdoctoral Fellowship in the laboratory of Eric Verdin to study HIV transcriptional regulation. Current work is focused on the role of the chromatin environment at the site of integration on HIV transcription, the mechanism of Tat-induced chromatin remodeling and the acetylation/deacetylation of the HIV transactivator Tat. Candidates should possess a Ph.D., M.D. or both and have a strong background in molecular biology and/or protein biochemistry. Job #V02-10S

In addition, Gladstone offers excellent benefits, including three weeks of vacation, employer-paid medical programs, tuition reimbursement, and various retirement programs.

All positions require a Ph.D., M.D., or both. Please send cover letter indicating job number along with CV and references to:

The J. David Gladstone Institutes
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We currently have 2 contract opportunities available, engaged through Quantum Resources, a third-party employer. The selected candidates will work in Kalamazoo, Michigan, under the supervision of an established team of Pharmacia cardiovascular scientists. The appointment is for up to 2 years, with an annual stipend plus benefits, including healthcare and moving expenses. Support for attendance at scientific conferences is also provided.

POSTDOCTORAL RESEARCH ASSOCIATES, PRECLINICAL DEVELOPMENT

The first position will develop higher throughput systems characterizing the propensity for preclinical compounds to block cardiac ion channels and translate cell-based assay results into the pharmacology of drug candidates in the intact organism. Experience with assay development, ion channel pharmacology and a broad range of assays and detection formats (radiometric, fluorescence, and cellular reporters) is strongly preferred. Demonstrated skills in cloning, functional expression and characterization of ion channels is desirable.

The other researcher will develop predictive models of cardiac voltage-dependent channels and drug-channel interactions, and conduct innovative research in the mechanism(s) of drug interactions with known ion channels. Experience with computational models of drug-channel interactions and demonstrated skills in single channel analysis and characterization of ion channels are strongly preferred.

Both positions are primarily electrophysiology-focused. Successful candidates will have received doctoral degrees within the past two years and experience in cellular electrophysiology, computer-based data acquisition, and data analysis. Excellent written and verbal communication skills, strong interpersonal and team research abilities are required.

To apply for this position, please send your resume, indicating the position of your interest, to: **Beryl Galer, Quantum Resources, 8191 Moorsbridge Road, Suite G, Kalamazoo, MI 49024. Email: bgaler@quantum-res.com.** For more information about Pharmacia, please visit our website at www.pharmacia.com. EEO/AA EMPLOYER M/F/D/V

PHARMACIA

The Northwest Fisheries Science Center (**website: http://www.nwfsc.noaa.gov/**) is seeking a **MARINE ECOLOGIST**. Appointment will be made at the GS–12 level with salary commensurate with experience in the range of $55,839 to $72,588. *U.S. citizenship is required.* We seek an individual working in any area of marine ecology to complement the existing strengths in fisheries biology of the Northwest Fisheries Science Center. We are specifically interested in candidates who will address one or more of the following topics: (1) interactions of exploited fish populations with predators, competitors, and prey; (2) effects of fishing on fish habitat; (3) interactions between fishes and their habitat; or (4) marine protected areas as a fisheries conservation and management tool. Additionally, the incumbent will serve as a technical liaison and provide outreach to fishery managers and constituents on the topic of marine protected areas and/or ecosystem-based management and is expected to publish research in peer-reviewed literature. A Ph.D. or equivalent degree, postdoctoral research experience, demonstrated expertise, and research productivity are desired. Applicants must address and meet specific placement factors and specialized experience as defined in the official vacancy announcement. To apply for this position (Number W.NMF.NWC.020291.JC), go to the Department of Commerce Opportunities On-Line (COOL) **website: http://www.jobs.doc.gov**. Closing date is May 3, 2002. For more information, contact: **Phillip Levin; e-mail: phil.levin@noaa.gov**.

BOTANIST

Occidental College invites applications for a tenure-track position in plant biology at the **ASSISTANT** or **ASSOCIATE** level to start fall semester 2002. Applicants should have a strong commitment to educating undergraduates through teaching and research. The successful candidate is expected to develop a rigorous research program in plant biology involving undergraduates. We are open to a diversity of approaches involving the study of plants on the organismal level. Teaching responsibilities will include an intermediate-level course in plant biology, an upper-division specialty course or courses, regular participation in a senior seminar course, and participation in the College's core curriculum. Occidental, located in Los Angeles, California, is a nationally ranked, small liberal arts college with excellent research and teaching facilities. For more information on the College, visit our **website: http://www.oxy.edu**. Send curriculum vitae, a statement of teaching and research interests, copies of significant publications, and have three letters of reference sent to: **Dr. Elizabeth Braker, Department of Biology, Occidental College, 1600 Campus Road, Los Angeles, CA 90041. E-mail: bbraker@oxy.edu; Telephone: 323-259-2645; FAX: 323-341-4974**. Review of applications will begin immediately and continue until position is filled. *Occidental is deeply committed to Affirmative Action and is nationally recognized for its broadly diverse student body and faculty. Women and minorities are particularly encouraged to apply.*

POSTDOCTORAL POSITION
NEURAL/IMMUNE INTERACTIONS

Position available immediately to study effects of sensory neuropeptides on lymphocyte development. Areas of interest include CGRP and B cell development, CGRP receptor expression during development, and CGRP-mediated signal transduction. Requires a Ph.D. or equivalent with experience in biochemical, cellular, and molecular techniques. Send curriculum vitae and names of three references to: **Dr. Joe McGillis, Department of Microbiology, Immunology, and Molecular Genetics, University of Kentucky College of Medicine, Lexington, KY 40503-0298. E-mail: jpmcgi01@uky.edu**. *The University of Kentucky is an Equal Opportunity Employer and encourages applications from women and minorities.*

POSITIONS OPEN

DIRECTOR OF THE STEM CELL CENTER
Northwestern University Medical School

Northwestern University Medical School is seeking a Director of a cross-departmental stem cell center devoted to the study of stem cell biology. As part of its strategic plan, the Medical School has made major commitments for expanding its programs in stem cell sciences. The Director of the Center will have substantial resources for building and expanding stem cell programs both in the basic science and the clinical Departments. The Director will be able to establish new laboratories studying both basic and applied aspects of stem cell biology and will also be able to build interdisciplinary programs throughout the Medical School. Senior Scientists with strong research programs employing innovative molecular/cellular approaches to stem cell biology are encouraged to apply. The candidates must hold a Ph.D. degree or a combined M.D./Ph.D. degree.

This is a full-time, tenured position at the rank of **PROFESSOR** with salary and starting date negotiable. This is a continuing appointment. To ensure full consideration, submit the following materials: (1) current curriculum vitae and list of publications; (2) brief statement of research interests; and (3) contact information for three references no later than May 1, 2002, to: **Dr. John Kessler, Chairman of the Search Committee, 303 East Chicago Avenue, Ward Building 10-185, Chicago, IL 60611-3078. E-mail: jakessler@northwestern.edu**.

Please refer to Academic Search Number P-192-02. *Northwestern University is an Affirmative Action/Equal Opportunity Employer. Hiring is contingent upon eligibility to work in the United States. Women and minorities are especially encouraged to apply.*

FOREST LANDSCAPE ECOLOGY
Department of Forest Sciences
Faculty of Forestry
The University of British Columbia

We seek applicants with demonstrated excellence in teaching and research in forest landscape ecology and conservation, especially those with botanical expertise. We especially seek individuals with strong teaching skills in conservation, community or landscape ecology, biometrics, and/or field and research methods at the undergraduate and graduate levels. The successful applicant will participate in the Centre for Applied Conservation Research, offer courses in an award winning Natural Resources Conservation B.Sc. program, and establish an active research and graduate training program in the broad area of forest ecology including grassland and other ecosystems in managed and/or unmanaged landscapes. This tenure-track position is expected to be filled at the **ASSISTANT PROFESSOR** level. Salary will be commensurate with qualifications and experience. Further information on this faculty position and related programs at UBC can be found at **website: http://www.forestry.ubc.ca**.

Applications should be received by June 30, 2002, and should include curriculum vitae; a statement of research interests; evidence of successful teaching or a statement of teaching philosophy; and the names, addresses, telephone numbers, and e-mail addresses of three references. Send applications in confidence to:

Dr. Kathy Martin, Search Committee Chair
Department of Forest Sciences
Faculty of Forestry
The University of British Columbia
3041-2424 Main Mall
Vancouver, BC V6T 1Z4 Canada
Telephone: 604-822-9695; FAX: 604-822-9133
E-mail: kmartin@interchg.ubc.ca

The University of British Columbia hires on the basis of merit and is committed to Employment Equity. We encourage all qualified persons to apply; however, Canadians and permanent residents of Canada will be given priority.

POSITIONS OPEN

RESEARCH MOLECULAR BIOLOGIST/GENETICIST
United States Department of Agriculture
Agricultural Research Service

The U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), Plant Genetics Research Unit in Columbia, Missouri, is seeking a **RESEARCH MOLECULAR BIOLOGIST/GENETICIST**; GS–11/12/13 ($45,285 to $83,902; salary commensurate with experience). A major objective of this position is to elaborate a functional genomics approach for analysis of soybean seed development and composition. Included are elucidation of gene products and their control, interactions among themselves and the environment, and variation in expression in plant growth. Candidates may qualify based on education directly related to the position and/or specialized experience involving molecular biology, application of genetic techniques, and the modification of biological functions. *United States citizenship is required.* Comprehensive benefits package includes paid annual and sick leave, life insurance, health insurance, and a savings and investment plan in addition to a federal retirement plan. For information on the research program and/or position, contact: **L. L. Darrah, Research Leader; Telephone: 573-882-2349; e-mail: darrahl@missouri.edu**. For the full text of the vacancy announcement, which includes application procedures and forms, contact: **JoAnne L. Fernandez; Telephone: 573-875-5293; e-mail: fernandezj@missouri.edu**; ARS vacancy **website: http://www.afm.ars.usda.gov/divisions/hrd/index.html**, Announcement Number ARS–X2W–2181. Applications in response to this advertisement must be postmarked by May 31, 2002. *USDA-ARS is an Equal Opportunity Provider and Employer.*

PLANT PATHOLOGIST/MOLECULAR BIOLOGIST. The United States Department of Agriculture (USDA), Agricultural Research Service, Kearneysville, West Virginia, invites applications for the position of Plant Pathologist/ Molecular Biologist GS–11/12 ($46,469 to $55,694). The incumbent will conduct research on viral diseases that have a significant economic impact on stone fruit production with major emphasis on plum pox virus. The main purpose of this research is to develop innovative and effective virus control strategies for plum pox and other major *Prunus* viruses. Incumbent will work closely with federal, state, and private Research Scientists throughout the United States and internationally to fully develop effective genetic strategies for managing the adverse impact of virus diseases on stone fruit production. Specific objectives may include but are not limited to virus isolation, identification, and characterization; the roles of viral movement and replication in relation to disease expression and severity; molecular characterization of viral genome organization, sequence variations, and pathogenic determinants; interactions of distinct viruses as these interactions affect disease; posttranscriptional gene silencing for viral control; and biological control strategies for virus management. This is a competitive, permanent position and *U.S. citizenship is required.* For further information on the position, contact: **Ralph Scorza; Telephone: 304-725-3451, Extension 322; e-mail: rscorza@afrs.ars.usda.gov**. For application information, contact: **Maryanne Cage; Telephone: 304-725-3451, Extension 332; e-mail: mcage@afrs.ars.usda.gov**. *USDA is an Equal Opportunity Employer. Women and minorities are encouraged to apply.*

POSTDOCTORAL POSITION

Available immediately to investigate molecular mechanisms involved in retinal degeneration by evaluating expression of genes and biological pathways associated with degeneration. A strong background in molecular or cell biology is desired. Additional experience in genetics is a plus. To apply, please send curriculum vitae and names and addresses of three references to: **Dr. Radha Ayyagari, W. K. Kellogg Eye Center, University of Michigan, Ann Arbor, MI 48105. E-mail: ayyagari@umich.edu**.

Staff Scientist Position
Retinal Research

A position is available immediately for a Ph.D. or M.D. to study the molecular biology of age-related macular degeneration. The position is renewable with a five-year term appointment. Candidates need to demonstrate an expertise in cellular and molecular techniques related to retinal / neuronal disease and/or angiogenesis. The successful candidate will be part of a highly interactive group of scientists and clinicians engaged in basic research and clinical trials aimed at developing novel diagnostic techniques and treatments for age-related macular degeneration. Candidates must have a doctoral degree or equivalent training and be U.S. Citizens or resident aliens. Salary is commensurate with qualifications and is accompanied with full benefits. Applicants should send their curriculum vitae, bibliography, and three letters of recommendation to:

Karl G. Csaky, M.D., Ph.D.
Gene Therapy Section
Building 10 10N112
National Eye Institute
National Institute of Health
Bethesda, Maryland 20892-1857
E-mail: kcsaky@helix.nih.gov
Telephone: 301-402-0896
Fax: 301-480-1122

STOWERS INSTITUTE
FOR MEDICAL RESEARCH

Stowers Institute Postdoctoral Program

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

Robb Krumlauf, PhD.
Regulatory pathways in the developing brain & nervous system
James Coffman, Ph.D.
Genomic regulatory systems in sea urchin embryogenesis
Joan Conaway, Ph.D.
Mechanism and regulation of transcription by RNA polymerase II
Ron Conaway, Ph.D.
Molecular mechanism and regulation of gene transcription
Chunying Du, Ph.D.
Control of apoptosis in mammalian systems
Jennifer Gerton, Ph.D.
Mechanisms ensuring fidelity of chromosome distribution
Kent Golic, Ph.D.
Chromosome structure and function in Drosophila
Scott Hawley, Ph.D.
Control of meiotic chromosome behavior in Drosophila
Linheng Li, Ph.D.
Regulatory networks in hematopoietic stem cell development
Olivier Pourquié, Ph.D.
Regulation and timing of vertebrate segmentation
Paul Trainor, Ph.D.
Tissue interactions regulating cranial and facial development
Ting Xie, Ph.D.
Molecular regulation of germline stem cells in Drosophila and mouse
Arcady Mushegian, Ph.D.
Computational analysis of genes and proteins
Brian Sauer, Ph.D.
Biochemical genetics of the Cre/lox system: gene targeting in mice

More information may be found at:

www.stowers-institute.org

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

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

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

The National Cancer Institute is an Equal Opportunity Employer.

EXECUTIVE POSITION

Executive Vice President for Research
Houston, TX

We are seeking an individual to help provide leadership for the President at the Health Science Center. Reporting to the President, the incumbent is responsible for programs related to research, research development, selected support services, interdisciplinary programs, projects and services in order to meet the needs of faculty and students.

Prefer candidates who have functioned at a senior level with a record of academic achievement and a national and international reputation as a respected scientist in Molecular Genetics and/or Proteonomics. The successful candidate will also have an M.D., Ph.D. or both or another terminal degree and have a demonstrated ability to provide leadership in a faculty administration, a school or a health science center.

We expect to fill this position no later than September 1, 2002. Please forward your resume by May, 31st, 2002 in confidence to: **Jobs@admin4.hsc.uth.tmc.edu [Please Reference Job Code 02-1384 in the Subject Line] Fax: 713-500-3124 or mail to:**

THE UNIVERSITY *of* TEXAS
HEALTH SCIENCE CENTER AT HOUSTON

7000 Fannin, Suite 150, Houston, TX 77030-5401

This is a security-sensitive position and thereby subject to Texas Education code §51.215. EOE/AA

POSITIONS OPEN

RESEARCH AGRONOMIST OR RESEARCH ECOLOGIST
United States Department of Agriculture
Agricultural Research Service

The U.S. Department of Agriculture, Agricultural Research Service, Fairbanks, Alaska, Subarctic Agricultural Research Unit, invites applications for the position of Research Agronomist or Research Ecologist; $49,959 to $77,229 per annum plus 25 percent COLA (salary commensurate with experience). A Ph.D. or equivalent in agronomy, ecology, biology, or a closely related field is desired. The incumbent plans, supervises, conducts, and publishes basic and applied research on weeds of agricultural and natural systems and advises on technical and practical matters related to exotic invasive plant management. The incumbent provides weed control expertise for multi-disciplinary team research projects and leads independent and team research to improve understanding of the ecology and management of weeds including exotic invasive species in sub-Arctic crops and natural systems. This assignment is part of a highly technical, long-term fundamental research program providing knowledge about the ecology and management of weeds affecting cropping systems and sub-Arctic natural systems.

This is a competitive, permanent appointment and *U.S. citizenship is required.* For specific application procedures and requirements, obtain a copy of the vacancy announcement on our **website: http://www.ars.usda.gov**. For assistance, you may call: **Ms. Trudy Silva; Telephone: 510-559-6000; e-mail: tsilva@pw.ars.usda.gov**. Applications must be postmarked by the closing date on the announcement: May 31, 2002. Please mark your application with the vacancy announcement number, ARS–X2W–2236. *ARS is an Equal Opportunity Provider and Employer. Women and minorities are encouraged to apply.*

BAYLOR COLLEGE OF MEDICINE

GeneExcel is a new Baylor start-up company specializing in state-of-the-art, nonviral delivery for applications in animals and humans. **JUNIOR** and **SENIOR SCIENTIST** positions are available in the fields of chemistry, biochemistry, and molecular biology. Experts in the following areas are encouraged to apply:

(1) targeted delivery,
(2) ligand synthesis,
(3) DNA purification and scale-up,
(4) chromatography resin production,
(5) design and construction of high-level gene expression cassettes, and
(6) GMP manufacture and documentation.

GeneExcel offers competitive salaries and benefits. Successful applicants must have a proven track record in their fields and excellent communication skills. They must also be highly motivated and able to work independently. As a grant-funded position, *only U.S. citizens or permanent residents will be considered for employment.* Applicants should send full-length curriculum vitae, a statement of expertise and research interests, and at least three letters of recommendation to the following mailing or e-mail address:

Dr. Nancy Smyth Templeton
Center for Cell and Gene Therapy
Baylor College of Medicine
One Baylor Plaza, Alkek Building, Room N1010
Houston, TX 77030
E-mail: nancyt@bcm.tmc.edu

Baylor College of Medicine is an Equal Opportunity/Affirmative Action/Equal Access Employer.

POSTDOCTORAL POSITIONS in bioorganic and bioinorganic chemistry are open to study the mechanisms by which enzymes activate C–H and N≡N bonds. For more information, visit **website: http://cricket.chem.uiowa.edu/~kohen/**. Experience in enzymology, physical-organic chemistry, inorganic chemistry, or biochemistry preferred. Send curriculum vitae and two letters of reference to: **Professor Amnon Kohen, Department of Chemistry, University of Iowa, Iowa City, IA 52242 U.S.A. E-mail: amnon-kohen@uiowa.edu**. *UI is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

POSITIONS OPEN

DNA MARKERS PROJECT LEADER

International Paper Company is searching for a Project Leader for its DNA marker program.

Requirements: (1) a Ph.D. in quantitative or molecular genetics with experience in both disciplines, (2) training in statistical methods as applied to gene mapping and DNA sequence analysis, (3) experience in managing a high-throughput molecular marker laboratory, and (4) excellent written and oral communication skills.

Purpose/responsibilities: This position leads a research project aimed at developing molecular marker and related genomics technologies for implementation in the company's genetics and tree improvement programs. Responsibilities include (1) development of molecular markers for traits of interest (QTLs), (2) design and layout of field experiments for use in gene mapping and QTL discovery, (3) analysis and interpretation of genetic field and laboratory data, and (4) development of creative and practical solutions to optimize tree improvement strategies through integration of molecular technologies and conventional breeding methods.

Job offer to the successful candidate is contingent upon the successful completion of a preemployment health assessment, which includes a drug screening, verification of a valid driver's license, and *compliance with the Immigration Reform Act.* Closing date for applicants is May 31, 2002, or until a qualified applicant is identified.

To apply, please submit a letter of application, résumé, and names and addresses of three references to:

Dr. Michael Cunningham
Forest Operations and Technology
International Paper Company
P.O. Box 1391
Savannah, GA 31402
E-mail: mike.cunningham@ipaper.com

International Paper is an Equal Opportunity Employer; Females/Minorities/Disabled/Veterans.

POSTDOCTORAL OPPORTUNITIES
Bacterial Pathogenesis

The laboratory of **Susan Straley, Ph.D.**, in the Department of Microbiology, Immunology, and Molecular Genetics, University of Kentucky, Lexington, has openings for Postdoctoral trainees. Projects involve determining the molecular mechanisms of the *Yersinia* virulence protein LcrV and of the secretion system that delivers it to host cells. The work involves molecular genetic technology and, to varying extents, protein interactions assays, microarray techniques, and cell biology. Please contact **e-mail: scstra01@uky.edu**. The Department has a strong pathogenesis group and training environment, and Lexington is a pleasant place to live. *The University of Kentucky is an Equal Opportunity Employer.*

POSTDOCTORAL POSITION available for recent Ph.D./M.D. to study seizure-induced changes in GABAergic systems. Whole cell electrophysiological recordings, photolysis of caged compounds, immunohistochemistry, and histology are techniques that will be performed on hippocampal tissue. Electrophysiology experience preferred. This is a nongovernment position. Send curriculum vitae and three references to: **Dr. Suzanne Bausch, Department of Pharmacology, Room C2007, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, MD 20814-4799. E-mail: sbausch@usuhs.mil**. *Equal Opportunity Employer/Affirmative Action.*

POSTDOCTORAL/RESEARCH ASSOCIATE POSITION available immediately to study the role of a novel tumor suppressor in human cancer/apoptosis. A strong background in molecular biology is required. Send biographical sketch, statement of research interests, and three references to: **Dr. Laure Aurelian, Professor, Virology/Immunology Laboratories, University of Maryland School of Medicine, 500–F MSTF Building, 10 South Pine Street, Baltimore, MD 21201. E-mail: laurelia@umaryland.edu.**

POSITIONS OPEN

The NASA Headquarters Office of Space Science announces the following vacancy:

Position: **ASTROBIOLOGY DISCIPLINE SCIENTIST**. Location: NASA Headquarters, Washington, D.C. Grade and salary: GS–13/14/15; $66,229 to $119,682 per annum (full-time, permanent civil servant). Announcement Number: HQ02B0012. Open and close date: April 2, 2002, through April 23, 2002.

The Astrobiology Discipline Scientist will play a significant role in defining and developing NASA's astrobiology program. Responsibilities would include many aspects of NASA astrobiology activities such as definition of research goals, establishment of program priorities, development of research solicitations, and allocation of program resources. In addition, responsibilities may include leading, planning, organizing, and controlling mission science requirements.

This position requires education and/or experience equivalent to a Ph.D. in an appropriate science discipline, knowledge and practice of research sufficient to formulate and manage science investigations, and knowledge of science program management techniques in order to select instruments and science investigations. Additional qualification requirements and detailed instructions for applying are provided in Vacancy Announcement Number HQ02B0012, which can be found at the following **website: http://www.nasajobs.nasa.gov**. A copy of the Announcement can also be obtained by calling **Telephone: 202-358-0347** or **202-358-1588**. NASA has implemented NASA STARS, an automated staffing and recruitment system. Applicants must submit a résumé and supplemental data through the Resume Builder at the NASAJobs website or through the Resume Operations Center as instructed in the Vacancy Announcement.

Questions of a technical nature concerning this position may be directed to: **Dr. Michael A. Meyer, Solar System Exploration Division; Telephone: 202-358-0307**. Questions concerning the application process may be directed to: **Mr. Mitch DeShong, NASA HQ Human Resources; Telephone: 202-358-1564**.

U.S. Department of Agriculture, ARS, **POSTDOCTORAL RESEARCH ASSOCIATE**: Research Entomologist/Research Ecologist. Research on Asian longhorned beetle, a recent invasive species: (1) development of scientific framework for rapidly assessing population biology of invaders and predicting spatial distribution; (2) analysis of spatial dynamics of insect populations; and (3) habitat assessment for simulation studies (**website: http://www.afm.ars.usda.gov/divisions/hrd/hrdhomepage/vacancy/02010.htm**). Recent Ph.D. in entomology, ecology, or a related biological science is required. Temporary; not to exceed two years. Salary range: $46,732 to $56,009 plus benefits. To apply, submit curriculum vitae; short description of research interests; transcripts; and names and contact information for three references by May 30, 2002, to: **Michael T. Smith, USDA, ARS, NAA Beneficial Insects Introduction Research Laboratory, Newark, DE 19713. Telephone: 302-731-7330, Extension 241; e-mail: mtsmith@udel.edu**. Position will remain open until filled. For further information, call: **Janie Carr; Telephone: 301-504-1414**. *USDA ARS is an Equal Opportunity Employer.*

RESEARCH POSITIONS are available for highly motivated individuals. Projects focus on the development of noninvasive epicutaneous vaccines (*Nature* **388**:729–730, 1997; *J. Virol.* **75**:11474–11482, 2001). Strong immunological background and molecular biology techniques are required. The successful candidate will receive an appointment at Vaxin, Inc. as a Research Scientist, Postdoctoral Fellow, or Research Technician. The appointee will work in a very supportive environment that will help to foster her/his career development. Vaxin, Inc. offers a competitive salary and benefits package. For further information, please send inquiries to: **Dr. De-chu C. Tang, Vaxin, Inc., VH–501, 1670 University Boulevard, Birmingham, AL 35294-0019. E-mail: tang@vaxin.com; website: http://www.vaxin.com.** *Vaxin, Inc. is an Equal Opportunity Employer.*

SEARCH OPENED: CHAIR DEPARTMENT OF PATHOLOGY & HUMAN GENETICS

The State University of New York Upstate Medical University invites nominations and applications for the position of Chair of the Department of Pathology and Human Genetics. We seek candidates who are nationally and internationally recognized in one specialty of the field and will transfer a well-funded, focused research program that complements the major research strengths of our University. The successful candidate will demonstrate exceptional leadership skills and the ability to recruit and develop an outstanding faculty. In addition, the candidate should have a record of accomplishment in teaching and administrative service in a medical school environment. The department has institutional teaching responsibilities in pathology and genetics. The University is committed to providing a generous start up package. The potential exists for the candidate to develop a basic science research component of the University's new Cancer Center and represents an outstanding opportunity to build a thriving department dedicated to excellence in research and education at a time of expansion.

SUNY Upstate Medical University is located in the University Hill section of Syracuse, New York, adjacent to Syracuse University and the Veteran's Administration Hospital. It is minutes away from beautiful residential neighborhoods, two of the consistently highest ranked K-12 school districts in New York State, and major cultural and recreational opportunities.

Please submit a curriculum vitae and a 3-page statement of research accomplishments, future goals, and your articulation of a vision for the promotion of Departmental excellence to: **Dr. Robert M. Kellman, Chairman, Search Committee, c/o Office of the Dean, SUNY Upstate Medical University, 750 East Adams Street, Syracuse, NY 13210.** The Upstate campus web site is **http://www.upstate.edu.** Review of applications will begin immediately. The search will remain open until the position is filled.

State University of New York
Upstate Medical University
Formerly known as SUNY Health Science Center

SUNY Upstate Medical University is an EOE/AA/ADA employer strongly committed to excellence through diversity.

CHAIR, DEPARTMENT OF GENETICS, CELL BIOLOGY AND ANATOMY
University of Nebraska College of Medicine

The University of Nebraska College of Medicine invites applications/nominations for the newly created position of Chair, Department of Genetics, Cell Biology and Anatomy.

This Department is derived from a combination of resources from the former Department of Cell Biology and Anatomy and the Center for Human Molecular Genetics. Presently the units to be combined are composed of more than 20 faculty with broad expertise in neural, cardiovascular and craniofacial development, genetics, stem cell biology, and neuroscience. The chair will be responsible for hiring new faculty for the Department, for bringing together clinical and basic scientists, for expanding cancer genetics in collaboration with the Director of the NIH-funded Eppley Cancer Center and for establishing a nationally recognized department of excellence. Laboratory facilities for new faculty will be available in newly constructed facilities. The successful candidate should have a Ph.D. or M.D. or equivalent degree and have demonstrated academic excellence and leadership skills.

Interested applicants with a documented history of research productivity and success in securing extramural research support should send a curriculum vitae, an outline of research interests, and three reference names to: **James O. Armitage, M.D., Dean, College of Medicine, and Thomas H. Rosenquist, Ph.D., Vice Chancellor for Research, Co-Chairs of the Search Committee, c/o Judy Houfek, Office of the Dean, University of Nebraska College of Medicine, 986545 Nebraska Medical Center, Omaha, NE 68198-6545.** Review of applications will begin on April 1, 2002 and continue until the position is filled.

The University of Nebraska is an Equal Opportunity/Affirmative Action Employer. Individuals of multiculturally diverse backgrounds are encouraged to apply.

Windber

WRI is a biomedical research organization in scenic western Pennsylvania. We invite outstanding and highly motivated scientists to join a multidisciplinary team focused on basic and translational research. **WRI** is adequately equipped for high throughput sequencing, genotyping, gene and protein expression profiling, SNIP analysis, CGH, microarray construction, Laser micro dissection, tissue banking, bioimaging, mass spectrometry and bioinformatics.

Postdoctoral fellows (2 positions): The ideal candidate will have a PhD or equivalent and 1-2+ years postgraduate research experience in molecular biology and/or biochemistry. Hands on experience and interest in pursuing research aimed at understanding the molecular changes associated with cardiovascular diseases or post-polio syndrome is desired. Ability to work in a high throughput research environment and use diverse bioinformatics tools will be a plus.

Research Associates (2 positions): Requires B.S. or M.S. in biology, chemistry or equivalent with 2+ years experience in any of the areas above. Experience in DNA and RNA isolation, sequencing or mass spectrometry will be a plus.

Contact: Send resume, cover letter, statement of research experience/goals, and 3 professional references to: **Director of Human Resources, Windber Research Institute c/o HR Department, Windber Medical Center, 600 Somerset Ave., Windber PA 15963.** Applications will be accepted until positions are filled. Direct questions to **<r.somiari@wriwindber.org>.**

Equal Opportunity /Affirmative Action Employer.

Leading the Way in Powering the

Proteomics Marketplace

Located in Fremont, CA, Ciphergen Biosystems (NASDAQ: CIPH) develops, manufactures, sells, and services ProteinChip® Systems and related products that discover, characterize and develop assay proteins from native biological samples. We're currently expanding our U.S. operations and have a great opportunity in both the Mid-Atlantic and Southwest/Southern CA regions for several ambitious, commercially-minded Ph.D. level biochemists/biologists.

Scientists, Field Sales

Mid-Atlantic and Southwest/Southern CA regions

Working alongside our clients' scientists in both industry & academia, you will utilize our proprietary ProteinChip® technology to develop protocols and rapidly solve biological problems & issues. We prefer applicants with substantial protein analysis experience as well as purification and/or characterization experience in ***Receptor-Ligand Interactions, Proteomics/Biomarker Discovery, Immunology, Protein Chemistry, and/or Immunoassay Development.*** Excellent analytical & communication skills are essential.

At Ciphergen Biosystems, not only will you enjoy our attractive compensation & benefits package, but you'll also have the chance to play an integral role in research advancements which will help diagnose, treat and cure challenging diseases. Please email your CV, referencing ***Job Code: FSMA63 for the Mid-Atlantic region*** *or* ***Job Code: FSSW60 for the Southwest/Southern CA region,*** *to:* ***staffing@ciphergen.com.***

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WWW.CIPHERGEN.COM

RESEARCH ASSOCIATE POSITION
Cancer Chemoprevention

A Research Associate position is available immediately in the Linus Pauling Institute at Oregon State University to investigate comparative mechanisms of cancer chemoprevention by selected plant-based chemicals including chlorophylls (see *PNAS* **98:14601, 2001**). This is part of a multicenter, multi-Investigator project funded by National Institutes of Health grant focusing on large-scale carcinogenesis, biomarker, and mechanism studies using rainbow trout, rat, and knockout mouse models and translation of these findings into pharmacokinetic studies with human volunteers. State-of-the-art facilities support the work. Applicants must possess a Ph.D. degree in biochemistry, chemistry, molecular and cellular biology, or related field. Applicants with a D.V.M and experience in carcinogenesis and molecular mechanisms are also encouraged to apply. A strong background in whole animal carcinogenesis and/or regulation and mutagenesis of cancer-related genes is highly desirable. Send curriculum vitae; a summary of research experience and interests; and names, telephone numbers, and e-mail addresses of three references to: **Dr. George Bailey, Linus Pauling Institute, Oregon State University, 571 Weniger Hall, Corvallis, OR 97331-6512. Telephone: 541-737-3164; FAX: 541-737-5077; e-mail: george.bailey@orst.edu.** *OSU is an Affirmative Action/Equal Employment Opportunity Employer and has a policy of being responsive to dual-career needs.*

PROGRAM DIRECTOR
NATIONAL ECOLOGICAL OBSERVATORY NETWORK (NEON)
Project at AIBS

The American Institute of Biological Sciences (AIBS), a nonprofit scientific association in Washington, D.C. (**website: www.aibs.org**), seeks a Ph.D. Scientist with program management experience to lead a new project assisting the National Science Foundation with its National Ecological Observatory Network (NEON) program. Preferred start date no later than 31 May 2002. Contingent upon anticipated external funding. This is a full-time, salaried position in the AIBS Washington office for an initial grant period of three years. Responsibilities include assembling a Steering Committee from the AIBS and broader biological/scientific community to address NEON's future programmatic growth, convene workshops, and conduct other collaborative/outreach activities. Travel required. Requires a broad vision of biology, great energy, and excellent communication skills. AIBS benefits include health care and retirement plan. Send cover letter, résumé, references, and salary requirements to: **Executive Director, Attention: NEON Search, AIBS, 1444 Eye Street N.W., Suite 200, Washington, DC 20005. FAX: 202-628-1509; e-mail: rogrady@aibs.org.** Closing date: when filled.

TWO POSTDOCTORAL POSITIONS
Oxidative Stress, Proteolysis, Gene Expression, and Aging
The University of Southern California

One position to work on the regulation of intracellular proteolytic pathways during oxidative stress. In particular, the successful candidate will focus on the role of the proteasome in recognition and degradation of stress-modified intracellular proteins. The second position is to work on the functions of the DSCR1 (Adapt78) gene. In acute oxidative stress DSCR1(Adapt78) is transcribed and translated to provide short-term stress resistance, but chronic overexpression of the gene is associated with neurofibrillary tangles and Alzheimer's disease. Salaries will be at competitive NIH rates depending on training and prior experience. Interested persons with Doctoral degrees in biochemistry, cell biology, or molecular biology are encouraged to contact: **Dr. Kelvin J. A. Davies, Andrus Gerontology Center, University of Southern California, 3715 McClintock Avenue, Los Angeles, CA 90089-0191. E-mail: kelvin@usc.edu.**

POSITIONS OPEN

POSTDOCTORAL POSITION
Computer Science
Computer Science and Mathematics Division

The Computer Science and Mathematics (CSM) Division (**website: http://www.csm.ornl.gov/csm-home.html**) at the Oak Ridge National Laboratory (ORNL) invites outstanding candidates to apply for an immediate opening in computer science. The successful applicant will participate in a highly interdisciplinary project on the development of advanced software tools for the automatic synthesis of high-performance algorithms for complex, tensor-based simulation methods focusing initially in the areas of quantum chemistry and nuclear physics.

This position offers an opportunity to interact with a broad range of research activities at a world-class laboratory for computational science including the Center for Computational Sciences (CCS), which hosts one of the largest unclassified computing capabilities in the world.

Position requires a Ph.D. in computer science or closely related field; a desire to work closely with Computational Scientists from other fields; and experience in one or more of the following areas: compilers and optimization techniques, domain-specific languages, generic and generative programming, or functional programming and monads. A strong background in scientific publications is also encouraged. Initial appointment is for one year.

For consideration, please submit curriculum vitae and cover letter including a description of research interests, software development experience, and interdisciplinary or computational science experience to: **David Bernholdt, Computer Science, Computer Science and Mathematics Division, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831-6367. E-mail: bernholdtde@ornl.gov.** Please reference Project Number ORNL02-13-CSMD when applying for this position.

This appointment will be offered through the ORNL Postdoctoral Research Associates Program (**website: http://www.orau.gov/orise/edu/postgrad/ornlpdoc.htm**), which is administered by the Oak Ridge Institute for Science and Education (ORISE). Further information regarding this program as well as visa and clearance requirements can be found under the "Appointment Information" link at this website.

ORNL, a multiprogram research facility managed by UT-Battelle, LLC, for the U.S. Department of Energy, is an Equal Opportunity Employer committed to building and maintaining a diverse workforce. The program is open to all qualified U.S. and non-U.S. citizens without regard to race, color, age, religion, sex, national origin, physical or mental disability, or status as a Vietnam-era veteran or disabled veteran.

POSTDOCTORAL POSITIONS

Three Postdoctoral positions are available immediately at MBR Cancer Center, West Virginia University, to study the regulation of DNA repair gene expression and the molecular mechanisms of a novel chemotherapeutic compound in an ovarian cancer model. Experience in molecular and cellular biology is required. Please send your curriculum vitae and three references to: **Dr. Weixin Wang, Ph.D., Assistant Professor,** or **Dr. Jingjie Yu, M.D., Assistant Professor, MBR Cancer Center, West Virginia University, P.O. Box 9300, Morgantown, WV 26506. Telephone: 304-293-2243; FAX: 304-293-5244; e-mail: wwang@hsc.wvu.edu** or **e-mail: jyu@hsc.wu.edu.**

POSTDOCTORAL POSITIONS
Washington University Pain Center

Postdoctoral positions are available to study the dorsal spinal cord and pain using molecular and genetic tools. A strong background in neurobiology or molecular biology is preferred. For information, see **website: http://dbbs.wustl.edu/RIB/Chen.html.** Send curriculum vitae to **e-mail: chenz@morpheus.wustl.edu. Dr. Zhou-Feng Chen, Washington University School of Medicine Pain Center, 660 South Euclid Avenue, St. Louis, MO 63110 U.S.A.**

POSITIONS OPEN

UNIVERSITY OF SOUTHERN CALIFORNIA
Institute for Genetic Medicine (IGM)
Department of Biochemistry and Molecular Biology

We are seeking outstanding candidates at the **ASSISTANT** or **ASSOCIATE PROFESSORIAL** level who apply modern genetic and/or genomic approaches to contemporary problems in human disease etiology and in relevant model organisms. We are looking for interactive new colleagues to complement our existing group of eight faculty in the interdepartmental Institute. Competitive start-up packages and modern, well-equipped research facilities in the IGM collaboratories will be offered.

Please send curriculum vitae along with a statement of past research accomplishments and future plans. Candidates for Assistant Professor should also arrange themselves for three letters of recommendation to be included in their dossiers before screening will begin. Contact:

Anne Vazquez
Institute for Genetic Medicine
Department of Biochemistry and Molecular Biology
USC Keck School of Medicine
2250 Alcazar Street
Los Angeles, CA 90089-9075
E-mail: annvazqu@hsc.usc.edu
FAX: 323-442-2764

FACULTY POSITION IN DEVELOPMENTAL BIOLOGY
Department of Molecular, Cell, and Developmental Biology

The Department of Molecular, Cell, and Developmental Biology is searching for a Developmental Biologist. Appointment will be considered at the **ASSISTANT, ASSOCIATE,** or **FULL PROFESSOR** level. Applicants with outstanding accomplishments, particularly those using genetic approaches in model organisms, are strongly encouraged to apply.

Submit curriculum vitae, summary of research plans, and names and addresses of at least three references to: **MCDB Faculty Search; website: http://www.mcdb.ucla.edu/jobs/index.php.** Visit us at **website: http://www.mcdb.ucla.edu;** also see **website: http://www.uclaaccess.ucla.edu.** We will begin reviewing applications on June 15, 2002. *UCLA is an Equal Opportunity/Affirmative Action Employer.*

A **POSTDOCTORAL POSITION** in neuroscience is available at Cornell University Weill Medical College in New York City. Research will involve delineating the molecular mechanisms that account for mRNA trafficking to synapses and will utilize molecular biological, fluorescence microscopy, and primary neuronal culture techniques. See website for more details (**website: http://www.med.cornell.edu/gradschool/fac/jaffrey.html**). Queries as well as applications comprising curriculum vitae, statement of research interests, and contact information for three references should be e-mailed to: **Dr. Samie Jaffrey, Cornell University Weill Medical College, Department of Pharmacology, 1300 York Avenue, Box 70, New York, NY 10021. E-mail: srj2003@med.cornell.edu.**

POSTDOCTORAL POSITION available immediately to study mechanisms of transcriptional control of cardiovascular development and cardiac hypertrophy *in vitro* and *in vivo*. Projects include the functional characterization of novel genes in a transgenic mouse model, cardiac-specific gene regulation, and stem cell differentiation. A strong background in molecular or developmental biology required. Send applications with a cover letter, curriculum vitae, and names of three references to: **Youngsook Lee, Ph.D., Department of Anatomy, University of Wisconsin, 1300 University Avenue, Madison, WI 53706. E-mail: youngsooklee@facstaff.wisc.edu.**

Position Announcement
Director of Proteomics
Biotechnology Center

Proposed Starting Date: As soon as possible, after deadline date of May 24, 2002.

Responsibilities: The Director of Proteomics will oversee several units of the Biotechnology Center that are focused on the characterization, quantitation, and production of proteins and peptides. The responsibilities of the Director will be to assist faculty, university, and industrial partners in planning and implementing experimental approaches for small and large scale analysis of proteins, contributing to the preparation of grants for the procurement of new instrumentation, and to the acquisition of new technologies.

Qualifications: Required: PhD in molecular biology or biochemistry or a related field with experience in protein sciences. Candidates with prior experience in leading a core facility, strong technical skills, the ability to troubleshoot, excellent organizational, managerial and supervisory skills will be preferred.

Type of Position and Salary: Full time, 12 month regular academic professional position. Salary will be commensurate with experience.

Application: Send letters of application and resume, including the names, phone numbers, and addresses of three references to:

Rhonda Lipking
103 Observatory
901 S. Mathews Ave.
Urbana, IL 61801
Phone: (217) 333-1695
Fax: (217) 244-0466
E-mail: lipking@staff.uiuc.edu

Deadline: For full consideration, applications must be received by 5pm on May 24, 2002. Interviews may be conducted prior to deadline date, but a decision will not be made until after May 24, 2002 and all applications have been reviewed.

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SYMPOSIA

PENNSTATE

21st Summer Symposium in Molecular Biology

"Xenobiotic Receptors in Toxicology and Carcinogenesis"

Keynote Address: Ron Evans *(Salk)*

July 31-August 3, 2002 **University Park Campus**

Session I – Peroxisome Proliferator–activated Receptor
Ray DuBois *(Vanderbilt)*
Bruce Spiegelman *(Harvard)*
Walter Wahli *(U. Lausanne, Switzerland)*
Frank Gonzalez *(NIH)*

Session II – PXR/CAR
Steve Kliewer *(GlaxoSmithKline)*
Nigishi Masahiko *(NIH)*
David Moore *(Baylor)*
Curt Omiecinski *(U. Washington)*

Session III – Aryl Hydrocarbon Receptor
Chris Bradfield *(U. Wisconsin)*
Gary Perdew *(Penn State)*
Oliver Hankinson *(UCLA)*
Mike Denison *(UC Davis)*

Session IV – Estrogen Receptor
John A. Katzenellenbogen *(U. Illinois)*
Benita Katzenellenbogen *(U. Illinois)*
Steve Safe *(Texas A&M)*
Ken Korach *(NIH)*

Registration: Faculty & Researchers $170, Postdoctoral Scholars & Technicians $100, Graduate Students $50, Undergraduate Students $25
For more information, contact Betsy R. King, Program Coordinator 201 S. Frear Lab, University Park, PA 16802-6005, Phone (814) 863-1918, Fax – (814) 863-7024, or E-mail – brk12@psu.edu
Visit our website: http://www.psu.edu/dept/symposium

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

ANNOUNCEMENTS

67th Cold Spring Harbor Symposium on Quantitative Biology

The Cardiovascular System

May 29 - June 3, 2002

Organized by:

Bruce Stillman & David Stewart, *Cold Spring Harbor Laboratory*

Topics

Angiogenesis/Anti-angiogenesis
Arrythmogenesis/Channels
Atherosclerosis
Excitation and Contraction
Heart and Vascular Development
Hypertension
Hypertrophy/Heart Failure
Myocyte Biology

Abstracts due: Please call us

Posters will be limited to a maximum of 120 total

Partial list of speakers

Kari Alitalo	Mark Fishman	Timothy Mohun
Jeffrey Arbeit	Manfred Frasch	Karen Moulton
Antonio Baldini	Richard Harvey	Charles Murry
Robert Benezra	Jay Horton	Eric Olson
Laura Benjamin	Richard Hynes	Renata Pasqualin
Gabrielle Bergers	Seigo Izumo	Richard Roman
Helen Blau	Rakesh Jain	Nadia Rosenthal
David Cheresh	Raghu Kalluri	Maria Rupnick
Kenneth Chien	Daniel Kelly	Thomas Sato
Thomas Coffman	Paul Krieg	Christine Seidman
Jonathon Cohen	Andrew Lassar	Jonathan Seidman
Shaun Coughlin	Leslie Leinwand	Celeste Simon
Harold Dvorak	Richard Lifton	Deepak Srivastava
Jonathan Epstein	Douglas Mann	Didier Stainier
Neal Epstein	Eduardo Marban	Brant Weinstein
Napoleon Ferrara	Andrew Marks	George Yancopoulos
Glenn Fishman	Elizabeth McNally	Joseph Yost
Mark Mercola		

Other 2002 CSHL Meetings

Evolution of Developmental Diversity ***April 17 - 21***
Gene Expression and Signalling in the Immune System ***April 24 - 28***
Molecular Chaperones and the Heat Shock Response ***May 1 - 5***
Genome Sequencing & Biology ***May 7 - 11***
The Cell Cycle ***May 15 - 19***
Retroviruses ***May 21 - 26***
Cancer Genetics & Tumor Suppressor Genes ***August 14 - 18***
Molecular Genetics of Bacteria & Phages ***August 20 - 25***
Mouse Molecular Genetics ***August 28 - September 1***
Translational Control ***September 10 - 15***
Dynamic Organization of Nuclear Function ***September 18 - 22***
Axon Guidance & Neural Plasticity ***September 25 - 29***
Molecular Genetics of Aging ***October 2 - 6***
Germ Cells ***October 9 - 13***
Human Origins & Disease ***October 30 - November 3***
Tissue Engineering ***November 21- 24***
Therapeutic Opportunities in Neurodegenerative Diseases ***Dec 5 - 8***
Comparative Plant Genomics ***December 12 - 15***

Cold Spring Harbor Laboratory
Meetings & Courses Programs
1 Bungtown Road, Cold Spring Harbor NY 11724
Tel 516 367 8346 Fax 516 367 8845
email meetings@cshl.edu www.cshl.edu/meetings

POSITIONS OPEN

POSTDOCTORAL POSITION for Ph.D. in biology-related field to conduct intracellular and patch clamp studies on olfaction and pheromones. Electrophysiology experience preferred. Studies will be conducted for one year with **Dr. Roth**, University of Bremen, Germany, and two years with **Dr. Wirsig**, University of Oklahoma, U.S.A. (**website: http://w3.ouhsc.edu/cell_biology**). A unique opportunity to join an international research team studying the evolution of pheromonal signaling. Begins as early as May 2002. Submit curriculum vitae and three reference letters to: **Dr. C. Wirsig, Department of Cell Biology, University of Oklahoma, 940 S.L. Young Boulevard, Oklahoma City, OK U.S.A. Telephone: 405-271-2377; e-mail: celeste-wirsig@ouhsc.edu.**

POSTDOCTORAL FELLOWSHIPS
Molecular Immunology
Weill Graduate School of Medical Sciences of Cornell University
New York City

Two or more positions are available to examine novel intracellular signaling pathways involved in T cell activation/differentiation. Studies will employ a wide range of state-of-the-art molecular and cellular techniques (e.g., microarray, viral-mediated gene transfer, digital immunofluorescence microscopy) and will include the production and analysis of transgenic animals. Highly motivated candidates should possess a Ph.D. degree in molecular or cell biology, immunology, biochemistry, or related discipline. Expected start date is July 2002. Send curriculum vitae, brief description of research experience and interests, and names of three references to: **Philip D. King, Ph.D., Head, T Cell Signaling Laboratory, Hospital for Special Surgery, Weill Medical College of Cornell University, 535 East 70th Street, New York, NY 10021. E-mail: kingp@hss.edu**. Immunology program **website: http://www.med.cornell.edu/gradschool/prog/immunology.html**.

POSTDOCTORAL POSITIONS
The Center for Human Genetics
Boston University School of Medicine

Two Postdoctoral positions are available immediately. The first position will study molecular mechanisms that regulate the expression of human fetal globin genes. Approaches include gene manipulation, transfection, protein purification, immunoprecipitation, and protein-DNA and protein-protein interactions. The second position will study intracellular signaling pathways that regulate fetal globin gene expression using transgenic mice. These positions require a strong background in molecular biology, intracellular signaling, and biochemical techniques as well as experience using transgenic mice. Salary is competitive and negotiable. Applicants should submit curriculum vitae and names, addresses, telephone numbers, and e-mail addresses of three references by mail to: **Tohru Ikuta, M.D., Ph.D., Center for Human Genetics, Boston University School of Medicine, 715 Albany Street W–408, Boston, MA 02118-2394. E-mail: tikuta@bu.edu.** *Boston University is an Equal Opportunity/Affirmative Action Employer.*

A **POSTDOCTORAL POSITION** is available for a Ph.D. Scientist with a strong background in molecular and cellular biology. Projects focus on the role of the Src tyrosine kinase in intestinal cell growth control. Funding is through an NIH grant. *Candidates must be U.S. citizens or permanent residents* with a Ph.D. Send curriculum vitae to: **Chris Cartwright, M.D., CCSR Building, Room 3115C, 269 Campus Drive, Stanford University, Stanford, CA 94305-5187. E-mail: chris.cartwright@stanford.edu; FAX: 650-723-5488.**

POSITIONS OPEN

POSTDOCTORAL POSITIONS for studies of proteolytic mechanisms in neurotransmission and neurodegenerative diseases. Studies in the laboratory of **Dr. Vivian Hook** will define the proteases and protease inhibitors involved in (1) producing active neuropeptide transmitters (enkephalin, ß-endorphin, ACTH, and others) and (2) proteolytic mechanisms involved in Alzheimer's and Huntington's neurodegenerative diseases. Interdisciplinary approaches in molecular biology with genomics and proteomics, protease/peptide biochemistry and mass spectrometry, and cell biology/gene expression are utilized. A Ph.D. degree with experience in at least two of these disciplines is required. State-of-the-art proteomic and genomic facilities are available at the new Buck Institute (**website: http://www.buckinstitute.org**) located near San Francisco. Projects involve research collaborations with University of California San Francisco and University of California San Diego. We offer a competitive salary, excellent benefits, and dynamic work environment. To apply, submit curriculum vitae with names of three references to: **Dr. Vivian Hook, c/o Human Resources**. Reference VH/PD/15 on subject line of **e-mail: hr@buckinstitute.org**. Mail: **Buck Institute for Age Research, 8001 Redwood Boulevard, Novato, CA 94945. FAX: 415-899-1810.**

POSTDOCTORAL POSITION
RESEARCH ASSISTANT
Immunology of Cell Death

Positions available immediately for Ph.D. and M.S. These are NIH-funded positions where the research focuses on mechanism(s) underlying cytotoxic cell granule-mediated apoptosis with emphasis on understanding how perforin delivers granule-associated serine proteases (granzymes) to induce cell death (*Immunity* **16**:416, 2002). Experience in imaging (flow cytometry and CLSM) as well as biochemical and molecular biological techniques is crucial. Please submit curriculum vitae and references to:

Christopher Froelich, M.D.
Professor of Medicine
Evanston Northwestern Research
E-mail: c-froelich@northwestern.edu
Website: http://x.biochem.nwu.edu/ibis/faculty/ froelich.htm

ENHRI is an Equal Opportunity Employer.

TWO POSTDOCTORAL POSITIONS

The University of Rochester School of Medicine and Dentistry is seeking two Postdoctoral Fellows. The first position involves investigating the role of B lymphocytes and prostaglandins in cancer and immunity. The ideal candidate will have expertise in immunology and cell and molecular biology. The second position will pursue fibroblast activation by cytokines and immune cells in lung inflammation and fibrosis. Expertise with signal transduction or cell and molecular biology is desired. The positions are available immediately. Support for these positions is derived from NIH private foundation and industry, and the positions are for a minimum of two years. Send cover letter, curriculum vitae, and names and addresses of three references to: **Dr. Richard P. Phipps, University of Rochester School of Medicine, Lung Biology and Disease Program, Box 850, 601 Elmwood Avenue, Rochester, NY 14642. E-mail: richard_phipps@urmc.rochester.edu.** *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL FELLOWSHIP available to study structure-mechanism relationships in terpenoid cyclases using X-ray crystallography (e.g., see **Rynkiewicz et al.**, *PNAS* **98**:13543–13548, 2001). Applicants must have Ph.D. in biochemistry or chemistry and experience in protein chemistry and protein crystallography. Qualified applicants should submit curriculum vitae and the names of three references to: **Professor David W. Christianson, Roy and Diana Vagelos Laboratories, Department of Chemistry, University of Pennsylvania, Philadelphia, PA 19104-6323.**

POSITIONS OPEN

mayo

POSTDOCTORAL FELLOW
Department of Oncology
Rochester, Minnesota, U.S.A.

NIH-funded Postdoctoral positions are available immediately to work in the area of DNA damage-signaling pathways and cancer biology. The laboratory currently focuses on the biochemical and molecular aspects of breast/ovarian cancer and the roles of tumor suppressor genes p53, Chk2, BRCA1/BRCA2, and the DNA damage-signaling pathway in tumorigenesis. The approaches we are using range from mammalian cell culture and molecular biology to mouse and yeast genetics. A strong background in molecular and cellular biology is essential. We are seeking candidates who are self-motivated and career oriented. The research environment at Mayo Clinic is excellent. Prospective applicants are encouraged to contact me by **e-mail: chen.junjie@mayo.edu**.

Salary will be determined by the successful candidate's experience. There is an attractive benefit package. Mayo Clinic is a not-for-profit organization. Mayo integrates research with clinical practice and education in a multicampus environment. For further information, please visit **website: http://www.mayo.edu/research/**.

Applications including curriculum vitae and bibliography, summary of past accomplishments, and the names of three references should be sent to:

Junjie Chen, Ph.D.
Assistant Professor
Department of Oncology
Guggenheim Building, Room 1306
Mayo Clinic, 200 First Street S.W.
Rochester, MN 55905
Telephone: 507-538-1545
E-mail: chen.junjie@mayo.edu

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RESEARCH OPPORTUNITIES
MOLECULAR BIOLOGY
National Cancer Institute, Frederick
Center for Cancer Research
National Institutes of Health

POSTDOCTORAL POSITION is immediately available in the Protein Chemistry and Molecular Biology Section, Molecular Targets Drug Discovery Program (MTDDP), National Cancer Institute. The incumbent would study peptidic bioprobes for functional genomics, proteomics, and molecular target validation research. Additional details of the MTDDP can be found on the **website: http://home.ncifcrf.gov/mtddp/index.html**.

Applicants must have a Ph.D. in protein biochemistry or molecular biology. Experience in a broad range of techniques within molecular biology and biochemistry is essential; specific experience in antibody phage display techniques, DNA shuffling, error-prone PCR, molecular cloning, and cell-based assays would be advantageous. Candidates should have less than four years of postdoctoral experience. Send curriculum vitae and correspondence to: **Dr. Toshiyuki Mori, Building 1052, Room 121, Frederick, MD 21702-1201. E-mail: morid@dtpax2.ncifcrf.gov.** *An Equal Opportunity Employer.*

POSTDOCTORAL POSITION, NIH funded. Exciting opportunity to conduct multidisciplinary research on the use of genomics, proteomics, and imaging to assess preimplantation embryonic health. Experience with molecular and cell biology techniques essential. Please send curriculum vitae and three references to: **Dr. Carol M. Warner, Department of Biology, 414 Mugar Hall, Northeastern University, Boston, MA 02115. E-mail: cmw@neu.edu.**

NEW PATENT RELATED CAREER OPPORTUNITIES FOR

CHEMISTS – ENGINEERS IN ALL DISCIPLINES
BIOTECHNOLOGISTS – COMPUTER SCIENTISTS
PHYSICISTS – MOLECULAR BIOLOGISTS

BACHELORS TO DOCTORAL DEGREES
THROUGHOUT THE UNITED STATES, WESTERN EUROPE AND JAPAN

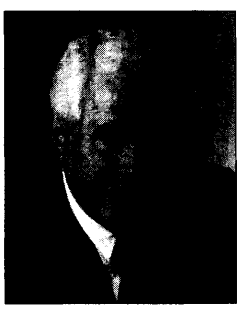
The patent and intellectual property departments of the corporations and law firms below (listed randomly) seek to employ professionals with Bachelors to Doctorates having the appropriate technical or scientific backgrounds, with work experience from none to 30 years or more. Although not all the listed organizations always have openings for such professionals, a changing majority *always* do. Interested professionals should have a basic knowledge of U.S. patent law, *which can be readily acquired in Professor Kayton's Patent Resources Group (PRG) course, as explained below.*

General Electric – Novartis Corporation – Merck & Co., Inc. – Intel Corporation
Pitney Bowes Inc. – Eastman Kodak Company – AstraZeneca – Philips Electronics
Aventis Pharmaceuticals – PPG Industries, Inc. – Akzo Nobel Inc. – Caterpillar Inc.
American Home Products Corporation

Pillsbury Winthrop – Fish & Richardson – Burns, Doane, Swecker & Mathis – Hogan & Hartson
Robins, Kaplan, Miller & Ciresi – Oblon, Spivak, McClelland, Maier & Neustadt – Cox & Smith
Foley & Lardner – Welsh & Katz – Finnegan, Henderson, Farabow, Garrett & Dunner
Birch, Stewart, Kolasch & Birch – Christensen O'Connor Johnson Kindness – Dorsey & Whitney

You could fill one of the following staff positions (the types vary with the organization), that combines the application of both scientific-technical and patent law knowledge:

- Patent Agent (non-lawyer scientist-engineer) registered to practice patent law before the U.S. Patent Office
- Patent-Technical Paralegal
- Scientific or Engineering Consultant with basic patent law training
- Patent Liaison Professional
- Patent Scientist-Engineer Search Specialist



Professor Kayton

The patent law training that is requisite for these staff positions is achieved in *Professor Kayton's* PRG course comprising 44 hours of either live classroom lectures (presented in several cities) or home study video lectures, all based upon, and accompanied by, texts designed *expressly for professionals with no legal background.*

Each organization listed above has agreed with PRG to reimburse you for your PRG course tuition investment, if you are offered and you accept employment with the organization in a patent law related position.

Demonstrating that you have basic patent law knowledge is supported by passing a six-hour U.S. Patent Office Exam. Alumni of *Professor Kayton's* PRG course have regularly passed the exam in numbers that far exceed the national average.

After you become one of those successful alumni, you may opt to have PRG forward your resumé for consideration by as many of the listed organizations as you choose. These organizations are willing to review the resumés of successful alumni who have appropriate scientific or technical backgrounds. Most of the participating organizations now employ *Professor Kayton's* alumni.

Professor Kayton proposes to open for you new and exciting professional vistas with richly satisfying rewards, as he did for himself long ago, and as he has done for *many thousands* of scientists and engineers during the past 35 years.

For further details, or to register for the PRG course, or to view a PRG course brochure, visit:

www.DrKayton.com

COURSES

Short Course in Computational Molecular Biology
University of Michigan, Ann Arbor
July 8-12, 2002

Objectives: The faculty of the University of Michigan Bioinformatics Program joined by **Michael Zuker** (Professor for Mathematical Sciences at Rensselaer Polytechnic Institute) and **Jürg Ott** (Professor and Head of the Laboratory of Statistical Genetics of Rockefeller University) offer a challenging, intensive course covering material from our regular graduate course on computational biology in a format that is accessible to working scientists. Participants will become familiar with the theory and practice of molecular sequence analysis and are offered sessions on programming in PERL. Participants should be accustomed with basic molecular biology and mathematics to the level of college calculus, but do not require programming skills or higher-level computer science. The course is targeted to students at the level of a first or second year doctoral candidate and addresses professional scientists in molecular biology or biotechnology. The aim of the course is to provide an appreciation for how and why different analytic approaches are used, their capabilities and their limitations. We emphasize the use of public domain software tools rather than focusing on a specific commercial package.

Syllabus: 5-day course with 6 hours of lectures each day (3 hrs. in the morning and 3 hrs. in the afternoon).

- Statistics, model based data analysis, HMMs, mathematical methods of gene mapping and gene finding
- Protein models, threading, dynamic programming, optimal and suboptimal RNA alignment and folding
- Information measures, Karlin-Altschul statistics, Sum statistics, gapped BLAST, database searching
- Multiple sequence alignment, generalized dynamic programming, phylogeny and molecular evolution
- Physical mapping, data clustering, and the inference of classifications, expression data analysis

One of the PERL programming sessions offered is targeted to professional software developers and the other is offered to scientists with a limited background in computer programming. All participants are encouraged to bring a laptop computer (Windows/Intel) for use in the programming sessions. A CD-ROM containing course lecture notes, problem sets, programming exercises, public domain software and reference material will be distributed.

Instructors:	**David States** (course master)	Bioinformatics, University of Michigan
	Warren Gish	Department of Genetics, Washington University
	Volker Nowotny	Bioinformatics, University of Michigan
	Jürg Ott	Laboratory of Statistical Genetics, Rockefeller University
	Michael Zuker	Mathematical Sciences, Rensselaer Polytechnic Institute

Graduate students from the U of M Bioinformatics Program will fill in as Teaching Assistants.

Additional information and registration materials may be obtained from our website:
http://bioinformatics.med.umich.edu/shortcourse2002.html

Early application is advised, as the number of participants for this course has to be restricted.

EPA
United States
Environmental Protection
Agency

Technology Challenge in Endocrine Disruptor Screening
Request for Information

The U.S. EPA Office of Science Coordination and Policy is seeking information on assays that may offer distinct advantages (i.e., reduced animal use, more cost-effective, and/or shorter in duration) compared with the Tier 1 and Tier 2 assays currently being developed for the Endocrine Disruptor Screening Program (EDSP). Detailed background and requirements on this RFI are announced at the EPA website for the EDSP: **http://www.epa.gov/scipoly/oscpendo/index.htm** under "Other Activities". Detailed information on the specific assays being standardized and validated for possible inclusion in the two batteries can also be obtained from the same website.

Please send (by courier) a cover letter and your responses to this RFI (4 hard copies) to: **Dr. Jan Tan, U.S. Environmental Protection Agency, 1201 Constitution Avenue, NW, Rm. 4121Q, Mail Code 7201M, Washington, DC 20004**. Please do not send responses by U.S. Postal Service to this address. As an alternative to sending 4 hard copies, you may send one copy electronically to **tan.jan@epa.gov**. **All final written responses to this RFI should be received by May 30, 2002.**

GRADUATE PROGRAMS

Two Taiwan International Graduate Programs in Chemical Biology and Molecular Biophysics and Molecular Dynamics and Spectroscopy
Academia Sinica, Taiwan

The Taiwan International Graduate Program has been established to attract high-quality young researchers from abroad. "Chemical Biology and Molecular Biophysics" and "Molecular Dynamics and Spectroscopy" are the first of the interdisciplinary and crossinstitutional Ph.D. graduate programs in Taiwan administrated jointly by Academia Sinica, National Taiwan University and National Tsing Hua University. The former program stresses student training with a strong research emphasis in basic and applied science at the interface between Chemistry/Physics and Biology. The latter one is designed to offer specific training and research opportunities to Ph.D. students interested in working on dynamics and spectroscopy of molecules in the gas phase as well as in condensed phases. Applicants with undergraduate degrees in the general science and engineering disciplines are welcome to apply. Students must have a B.S. or M.S. degree from an accredited institution in order to be considered for admission.

Interested applicants are requested to send (1) undergraduate and graduate (if applicable) academic records, or transcripts; (2) Graduate Record Examination (GRE) scores, including subject test scores in Chemistry, Physics, Mathematics or Biology; (3) TOEFL: all applicants whose first language is not English must submit the TOEFL score, except those who have recently completed two or more years of study in an English-speaking country; (4) three letters of recommendation; (5) plan of graduate study to: **Nancy Yang, Taiwan International Graduate Program, Academia Sinica, No.128, Academia Road Sec. 2, Nan-Kang Taipei, 11529, Taiwan** by May 31, 2002. Inquiries can be made via **FAX: 886-2-27898045**; **e-mail: tigp@gate.sinica.edu.tw**; **website: http://www.sinica.edu.tw/~tigp**.

SYMPOSIA

55th Annual Symposium on
Fundamental Cancer Research

Maintenance of Genomic Integrity

October 15-18, 2002

JW Marriott Hotel, Houston, Texas

Chairpersons: Randy J. Legerski, Ph.D.
Guillermina Lozano, Ph.D
Rodney S. Nairn, Ph.D.

Maintenance of the integrity of the human genome is critical to preventing the accumulation of aberrations and mutations leading to unregulated cell growth and cancer. DNA repair plays an essential role in removing both endogenous and induced damage to the genome. The 55th Annual Symposium on Fundamental Cancer Research will focus on "Maintenance of Genomic Integrity". This symposium will bring together world-renowned scientists to present and discuss novel research being conducted in their laboratories in the areas of: excision repair, recombinational repair, mismatch repair and translesion synthesis, cell cycle checkpoints, and chromosomal instability.

For information contact:

Office of CME/Conference Services
Phone: 713.792.2222 Fax: 713.794.1724
E-mail: meetings@mdaisd1.mdacc.tmc.edu

THE UNIVERSITY OF TEXAS
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CANCER CENTER

The Society for Biomolecular Screening Small Grants Program

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

The Society for Biomolecular Screening has established an endowment for initiation of a small grants program. These grants will provide start-up funding for research projects with potential to advance the disciplines, technologies and skills involved in screening and biomolecular discovery, including the support of graduate or undergraduate training in these areas. The program is intended to support projects that may have an applied focus or those that may involve radically new concepts.

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

Deadlines: Applications must be received by May 31st. Reviews will be conducted during June / July and notifications of awards will be done by August. Awards will be made to the applicant's institution and funds will be transferred on or about September 1.

Further information for submitting applications are available on The SBS website at www.sbsonline.org or by mail:

The Society for Biomolecular Screening
36 Tamarack Avenue, #348
Danbury, CT 06811
Fax: 203 748 7557

Harold M. Weintraub Graduate Student Awards 2002

The Fred Hutchinson Cancer Research Center congratulates the following recipients of the 2002 Harold M. Weintraub Graduate Student Award in recognition of outstanding achievement during Graduate Studies in the Biological Sciences.

Gil Bar-Nahum	New York University
Åsa Engqvist-Goldstein	University of California, Berkeley
Anne-Claude Gingras	McGill University
Alla Grishok	University of Massachusetts
Maxwell G. Heiman	University of California, San Francisco
Elissa P. Lei	Dana Farber/Harvard University
Clas B. Johansson	Karolinska Institutet
Thomas E. Lloyd	Baylor College of Medicine
Stavros Lomvardas	Columbia University
Paul S. Maddox	University of North Carolina, Chapel Hill
Gregory J. McKenzie	Baylor College of Medicine
Melissa B. Miller	Princeton University
Jay Parrish	University of Colorado, Boulder
Debra L. Silver	The Johns Hopkins University
Agata Smogorzewska	Rockefeller University
Saba Valadkhan	Columbia University
Zhaolan (Joe) Zhou	Harvard University

The recipients will participate in a Symposium this spring honoring Hal Weintraub and his commitment to innovative science. More information on this award can be found at: **http://www.fhcrc.org/science/basic/**

Invitrogen's Research Tools Development Grants Program

Creating the future of biotech — together

New and established investigators working in academics, not-for-profit institutions, and for-profit companies are encouraged to apply for Invitrogen's Research Tools Development Grants Program. Grants are provided on a quarterly basis, with total funding of US$5 million per year and annual awards up to US$100,000.

The second quarter 2002 focus is on **Functional Analysis**, understanding how genes and their corresponding proteins function and interact *in vitro* and *in vivo*. Deadline for full Grant Proposals is June 1. A preproposal is required. Visit www.invitrogen.com for more information, or contact us at grants@invitrogen.com.

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POSTDOCTORAL POSITION

A Postdoctoral position is available in the Department of Behavioral Neuroscience at the Oregon Health Sciences University (OHSU), Portland, Oregon. The successful candidate will work with a multidisciplinary team on a collaborative research project between OHSU and the Environmental Molecular Sciences Laboratory (EMSL) at Pacific Northwest National Laboratory (PNNL) located in Richland, Washington. Magnetic resonance imaging and spectroscopy will be applied to investigate the relationships in rodents between brain metabolism and genetic differences in ethanol response. The EMSL is a state-of-the-art NMR facility that presently houses 10 fully equipped multinuclear varian and chemagnetics liquid-state and solid-state NMR spectrometers including two Unity-Plus Varian NMR spectrometers operating at seven and 11.7 Tesla. In March 2002 a Bruker microimaging spectrometer was installed, also operating at 11.7 Tesla. The position is available starting June 1, 2002. The successful candidate should have a background in neuroscience, NMR imaging, and spectroscopy instrumentation. The applicant should be also eligible for NIH funding. Send curriculum vitae and names of three references to: **Dr. Robert Hitzemann, c/o Ms. Ginger Ashworth, Department of Behavioral Neuroscience L-470, Oregon Health and Science University, 3181 Southwest Sam Jackson Park Road, Portland, OR 97201-3098. E-mail: hitzeman@ohsu.edu**. Additional information on the position may also be obtained from: **Dr. Robert Wind; e-mail: robert.wind@pnl.gov**.

POSTDOCTORAL POSITIONS
Diabetes and Vascular Complications
Boston University School of Medicine

The Whitaker Cardiovascular Institute has several positions available to investigate the complications of diabetes with respect to vascular biology and oxidative stress. This work entails studies of oxidative protein modifications in endothelium and smooth muscle cells. Candidates should have expertise in cell and molecular biology and protein chemistry. Please send résumé and e-mail addresses or telephone numbers of three references to: **Richard A. Cohen, M.D., Vascular Biology, Department of Medicine, 650 Albany Street, X708, Boston, MA 02118. E-mail: racohen@bu.edu**.

POSTDOCTORAL POSITION

Fred Hutchinson Cancer Research Center in Seattle, Washington, has an exciting opening for a Postdoctoral applicant interested in a bioinformatics career doing cutting-edge research. Demonstrated background in math, statistics, or computer science. Computer programming skills preferred. Send curriculum vitae and three references to: **Trina Brown, Fred Hutchinson Cancer Research Center, 1100 Fairview Avenue North, MW-805, Seattle, WA 98109. E-mail: tabrown@fhcrc.org; FAX: 206-667-2437**.

Two **POSTDOCTORAL POSITIONS** immediately available to study mechanisms involved in diabetic complications and kidney embryonic development in experimental models. The potential candidates must have a good cell and molecular biology background. Please send curriculum vitae and three references to: **Y.S. Kanwar, M.D., Ph.D., Northwestern University, 303 East Chicago Avenue, Chicago, IL 60611. E-mail: y-kanwar@northwestern.edu**.

POSTDOCTORAL POSITION is available immediately in a neurophysiological laboratory to study hypoxia-induced plasticity in respiratory motor control. Experience in electrophysiological techniques and small animal surgery preferred. Please send curriculum vitae and names of three references to: **Dr. Liming Ling, Sleep Medicine Division, Brigham and Women's Hospital, Harvard Medical School, 221 Longwood Avenue, Boston, MA 02115. E-mail: lling@partners.org**.

POSITIONS OPEN

POSTDOCTORAL POSITION
AIDS Research

Tulane University Health Sciences Center. Postdoctoral positions are immediately available in the Department of Pathology, Tulane Regional Primate Research Center, to study the pathogenesis of AIDS in the simian immunodeficiency virus (SIV) nonhuman primate model. Ongoing projects include studies on T cell turnover, mucosal immunology, testing compounds that may prevent or treat HIV infection, and examining alcohol abuse as a cofactor in AIDS pathogenesis. Qualifications include M.D., D.V.M., and/or Ph.D. in a related field. Stipends range from $28,000 to $42,000 depending on experience. Please send a cover letter stating research interests and goals, curriculum vitae, and contact information for three references to: **Ronald S. Veazey, D.V.M., Ph.D., Tulane Regional Primate Research Center, 18703 Three Rivers Road, Covington, LA 70433**.

An NIH-funded **POSTDOCTORAL POSITION** is available immediately to study the interaction of inhaled anesthetics with small synthetic water-soluble and membrane-soluble α-helical bundle proteins. The research project involves protein design, protein synthesis, and the high-resolution structural characterization of protein-anesthetic complexes using NMR spectroscopy and X-ray crystallography. The applicant must have an M.D. and/or a Ph.D. degree and be skilled in biochemistry or spectroscopy. Send curriculum vitae and names and e-mail addresses of three references to:

Jonas S. Johansson, M.D.
Department of Anesthesia
Hospital of the University of Pennsylvania
Dulles 778
3400 Spruce Street
Philadelphia, PA 19104 U.S.A.
Telephone: 215-349-5472
FAX: 215-349-5078
E-mail: johanssj@uphs.upenn.edu

POSTDOCTORAL POSITION available to study molecular mechanisms of compensatory lung growth. Areas of interest: nitric oxide signaling, angiogenesis, alveolar cell proliferation and differentiation, growth factors, and cell signaling. Cellular, molecular, and biomedical imaging techniques will be utilized in rat and gene knockout mouse models. Applicants must have Ph.D. and molecular or cell biology background. The candidate will work with faculty in both medical and basic research as well as graduate students and other Postdoctoral Researchers. Our laboratory is productive, the research environment stimulating, and interaction with other laboratories is encouraged. Send curriculum vitae and a description of current research to: **Victor E. Laubach, Ph.D., University of Virginia Health System, Department of Surgery, P.O. Box 801359, Charlottesville, VA 22908. E-mail: vel8n@virginia.edu; website: http://www.med.virginia.edu/medicine/inter-dis/cvrc/Faculty/Laubach.html**.

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BIOINFORMATICS TOOLS FOR COMPARATIVE GENOMICS
July 15–19, 2002
University of California, Berkeley/LBNL/NHLBI

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

POSITIONS OPEN

POSTDOCTORAL POSITION AVAILABLE THE LABORATORY OF ALLERGIC DISEASES NIAID/NIH

A Postdoctoral position is available in the Laboratory of Allergic Diseases NIAID/NIH using mouse models of allergic disease with an emphasis on developing a basic understanding of *in vivo* mechanisms of allergic inflammation/asthma. The project will involve using cellular and molecular approaches to study gene expression in inflammatory cells. We are particularly interested in the role of T regulatory cells in the suppression of the allergic response. For this position, we are looking for a motivated individual with an M.D., Ph.D., or M.D./Ph.D. in immunology, physiology, or molecular/cell biology who has experience working with animal models and who preferably has interest in inflammation and cytokine/chemokine expression. Salary will be determined according to experience and education. Qualified and interested candidates should send a copy of their curriculum vitae and contact details including telephone numbers and e-mail addresses of three references to: **Postdoctoral Search Committee, c/o Andrea Keane-Myers, Ph.D., NIH/NIAID/LAD Twinbrook II Facility, Room 200E, 12441 Parklawn Drive, MSC 8180, Rockville, MD 20852-8180. E-mail: akeane@niaid.nih.gov**.

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POSTDOCTORAL POSITION
Massachusetts General Hospital and Harvard Medical School

A Postdoctoral position is available immediately in the Transplantation Biology Research Center at the Massachusetts General Hospital to study basic transplantation immunology. Emphasis will be on basic and translational studies in tolerance, chronic rejection, and xenotransplantation. Individuals applying for this position must have either an M.D. or Ph.D. degree. Please submit curriculum vitae, statement of research interests, and the names of two references to: **Joren C. Madsen, M.D., Ph.D., Massachusetts General Hospital, 55 Fruit Street EDR 105, Boston, MA 02114. Telephone: 617-724-1130; FAX: 617-724-8834; e-mail: madsen@helix.mgh.harvard.edu**. *Massachusetts General Hospital is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION. The research focuses on gap junction-mediated cell-cell communication and intercellular signaling mechanisms. Candidate should have a Ph.D. in biochemistry, cell, or molecular biology. Please send curriculum vitae and names and addresses of three references to: **Dr. Jean Jiang, Department of Biochemistry, University of Texas Health Science Center, 7703 Floyd Curl Drive, San Antonio, TX 78229-3900. E-mail: jiangj@uthscsa.edu**. *The University of Texas Health Science Center at San Antonio is an Equal Employment Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION to study cardiac muscle gene expression, apoptosis, and intracellular signaling events involved in various forms of heart disease. We use transgenic and gene-targeted mouse models as well as molecular approaches in cell-based systems. E-mail your curriculum vitae to: **Jeffery D. Molkentin, Ph.D., Children's Hospital, 3333 Burnet Avenue (MLC 7020), Cincinnati, OH 45229 U.S.A. E-mail: jeff.molkentin@chmcc.org**. *Equal Opportunity Employer.*

POSTDOCTORAL POSITION is available to investigate the role of signaling pathways in the pathogenesis of allergic disorders using gene-targeting approaches. Strong background in molecular biology and/or immunology is required. Send résumé to: **Talal Chatila, M.D., Division of Immunology, Department of Pediatrics, Box 8208, Washington University School of Medicine, 660 South Euclid Avenue, St. Louis, MO 63110. E-mail: chatila@kids.wustl.edu**.

POSITIONS OPEN

POSTDOCTORAL TRAINING PROGRAM in digestive disease research. Positions are available for studies in molecular and cellular mechanisms of digestive diseases at the Digestive Diseases Research Center, Vanderbilt University School of Medicine, Nashville, Tennessee. This multidisciplinary Center includes faculty from several departments including Biochemistry, Cancer Biology, Cell Biology, Medicine, Microbiology, Molecular Physiology, Biophysics, Pathology, Pediatrics, Pharmacology, Preventive Medicine, Psychiatry, and Surgery. This Center is seeking several Postdoctoral trainees (M.D. or Ph.D.). *Applicants for this NIDDK-sponsored training program must be U.S. citizens or permanent residents.* Areas of investigation include (1) growth regulation (proliferation, apoptosis, and cancer biology); (2) maintenance of epithelial integrity; (3) enteric neuroscience; (4) GI physiology, metabolism, and nutrition; and (5) clinical epidemiology and outcomes research. Salaries are negotiable. Applicants should submit curriculum vitae, a letter describing research interests, and three letters of recommendation to: **Sue Taylor, Administrative Manager, Digestive Disease Research Center, Vanderbilt University School of Medicine, C–2104 MCN, Nashville, TN 37232-2279. E-mail: sue.taylor@mcmail.vanderbilt.edu**. Any recommendation letters submitted by e-mail should be sent directly from the originator. Additional information about the Vanderbilt DDRC is available at **website: http://ddrc.mc.vanderbilt.edu**. *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS IN IMMUNOLOGY

Applicants are invited to study peripheral T cell tolerance and regulation of gene expression in lymphocytes. Candidates should possess a Ph.D. or M.D. degree and experience in cellular and molecular immunology (see **website: http://www.missouri.edu/~mmiwww/hz.htm**). Submit curriculum vitae and the names of three references to: **Professor Zaghouani, University of Missouri, School of Medicine, Department of Molecular Microbiology and Immunology, M616 Medical Sciences Building, Columbia, MO 65212. E-mail: zaghouanih@health.missouri.edu**. *The University of Missouri is an Affirmative Action/Equal Opportunity Employer. Women and members of traditionally underrepresented minorities are encouraged to apply. To request ADA accommodations, please contact our ADA Coordinator at Telephone: 573-884-7278; e-mail: hensonl@missouri.edu.*

POSTDOCTORAL ASSOCIATE POSITION at the University of Minnesota, Center for Immunology (**website: http://www.borg.labmed.umn.edu/imm.html**). The project involves investigating adhesion mechanisms used by leukocytes during the inflammatory response (*J. of Immunol.* **167**:1617; *Cell* **92**:809); 100 percent time, annually renewable. Must have completed a Ph.D. or equivalent foreign degree by start date and have extensive experience in molecular biology. Contact: **Dr. Bruce Walcheck; e-mail: walch003@umn.edu**. Mail cover letter, curriculum vitae, and names of three references to: **Doug Johnson, 205 VSB, 1971 Commonwealth Avenue, St. Paul, MN 55108**. *The University of Minnesota is an Equal Opportunity Educator and Employer.*

POSTDOCTORAL FELLOWSHIP, University of California San Francisco Department of Medicine and Cellular and Molecular Pharmacology/Biomedical Sciences Program. Competitive salary and benefits available now for qualified individual with interest in the molecular mechanisms of hormone action. Background in molecular cloning techniques necessary. Inquiries and curriculum vitae to:

David Pearce, M.D.
UCSF Box 0532
San Francisco, CA 94143-0532
E-mail: pearced@ medicine.ucsf.edu

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POSTDOCTORAL POSITION
The Scripps Research Institute

A Postdoctoral position is available immediately to study cell membrane-anchored proteolytic enzymes and their role in vascular formation and tissue remodeling. A structure/function approach applied to *in vivo* and *ex vivo* model systems will be utilized. *U.S. citizens or permanent residents* with a Ph.D. are invited to apply and submit the names of three references to: **James P. Quigley, Ph.D., The Scripps Research Institute, Department of Cell Biology/VB–1, 10550 North Torrey Pines Road, La Jolla, CA 92037**.

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIP
Marine Ecology

Available immediately. Minimum two-year term with option for extension. Strong research support. Considerable latitude to develop research consistent with your personal interests within broad subject areas. Candidates with training and publication record in one of the following fields are invited to apply: fish ecology, fisheries oceanography, ecology, ecological theory, physical/biological interactions. Research experience in marine systems not a prerequisite. Interested candidates should submit curriculum vitae; statement of research interest; details of availability; and names, addresses, telephone, and e-mail contacts of three references by e-mail simultaneously to: **Dr. W. C. Leggett; e-mail: wcl@post.queesu.ca** and **Dr. K. T. Frank; e-mail: frankk@mar.dfo-mpo.ge.ca**.

ANNOUNCEMENTS

CALL FOR AWARD NOMINATIONS

International Life Sciences Institute North America is soliciting nominations of individuals to be considered to receive its 2003 Future Leader Award. Deadline: June 28, 2002. For more information, contact **website: http://northamerica.ilsi.org/file/ACF42FC.pdf** (case sensitive) or contact: **F. DeLuca; Telephone: 202-659-0074; e-mail: fdeluca@ilsi.org**.

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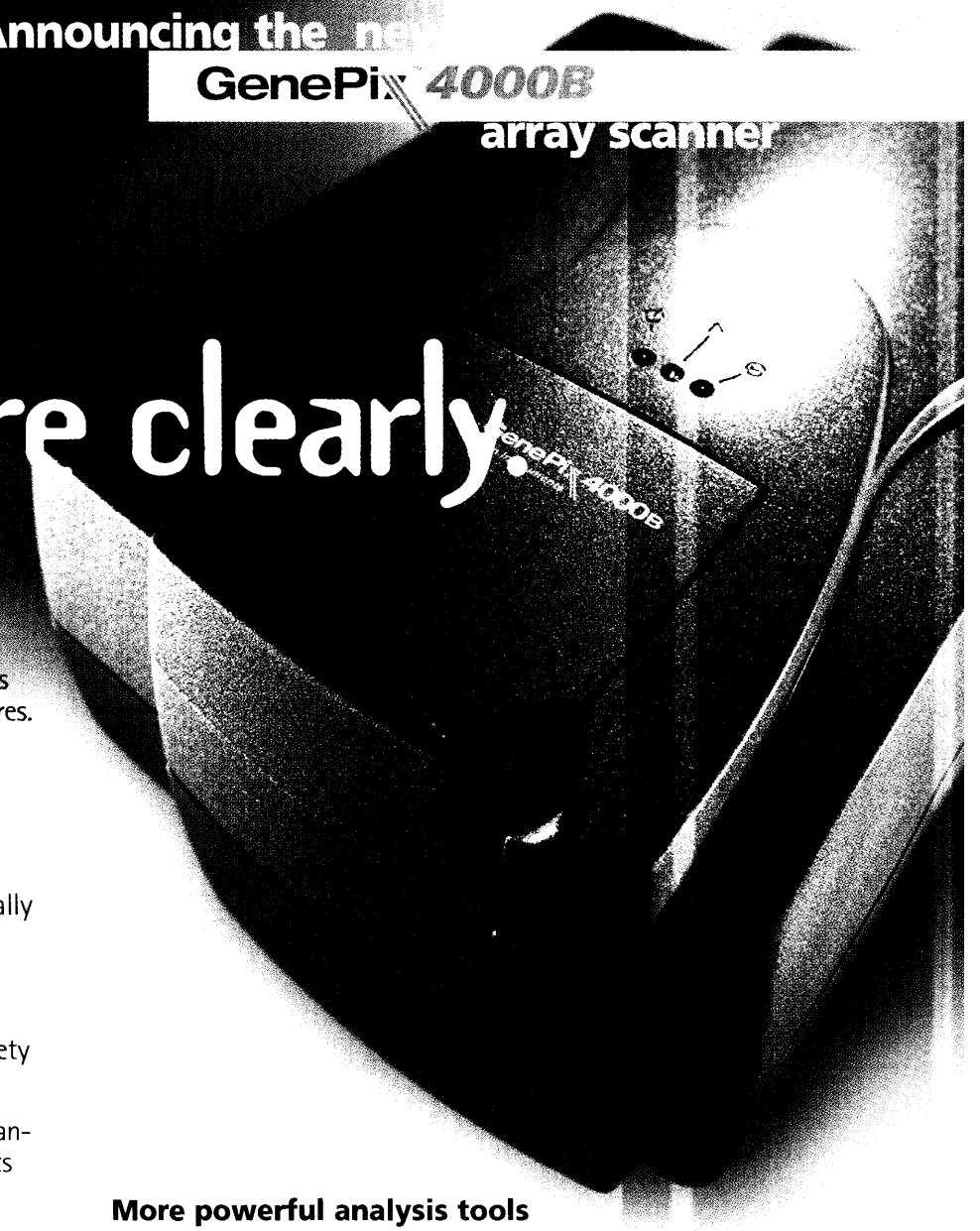

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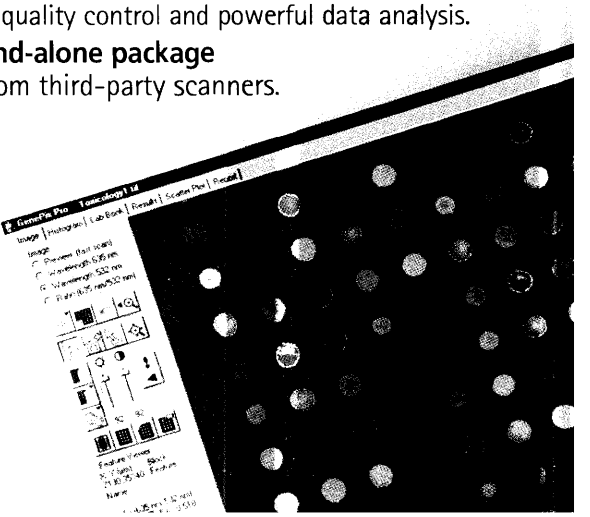

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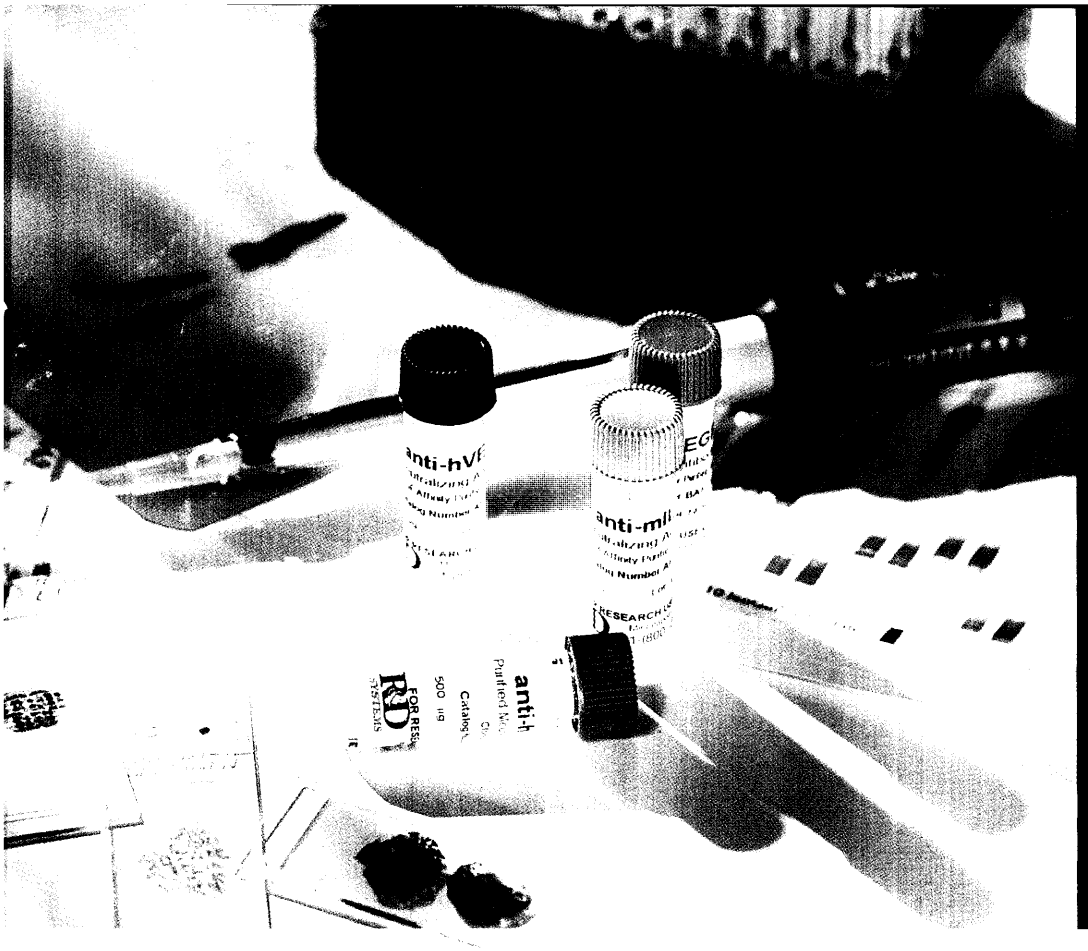

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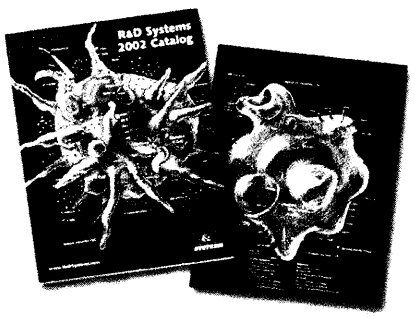

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