# PRODUCTS & MATERIALS

### **Monoclonal Antibodies**

Six monoclonal antibodies (mAbs) to angiotensin-converting enzyme (ACE) are directed against six different epitopes of the ACE molecule. ACE appears to play a key role in the regulation of vascular tone and remodeling, the development of atherosclerotic lesions, and systemic vascular pathology. CHEMICON International. Circle 139.

A panel of mouse mAbs to human sialosyl-Tn antigen is immunoglobulin G1 isotype. The antigen appears to be a marker for poorly differentiated colon carcinomas, adenocarcinomas, and other mucinous carcinomas. The mAbs can be used on paraffin-embedded, formalin-fixed, and cryostat tissue sections. **Biømeda. Circle 140.** 

The CD95 mAb can be used to induce apoptosis of activated T lymphocytes, B lymphocytes, NK lymphocytes, and thymocytes. Other applications include investigating autoimmune diseases, viral infections, and tumors. An antibody is also available that recognizes the killer inhibitory receptor, NKB1, expressed on NK lymphocytes. NKB1 inhibits NK-lymphocyte-mediated cytotoxicity of HLA-B target cells. **Becton Dickinson. Circle 141.** 

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The Ultima-Z is a comprehensive laser scanning confocal microscope. It features simultaneous ultraviolet and visible imaging, each under independent control. It offers two scanning modes: The StageScan mode permits imaging and quantitation of large specimens, while the DualScan mode combines galvanometric mirror and stage scanning for rapid imaging of smaller areas. All Ultima-Z opera-

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**Lindsey Grant** examines the human condition as the tribe nears the limits of the Earth's ability to support it. He discusses the ambivalent role of technology, the uses and limits of conservation, and the potential benefits of systematic foresight.

He relates population growth to current world energy, environmental and social issues and to U.S. foreign and domestic policies. He proposes a new mindset and new policies. On the IPCC climate policy proposals, for instance: "They treated population growth as an independent variable to which they must adjust, rather than as a factor that must be addressed if a real solution to their problem is to be found."

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ages, three-dimensional confocal reconstructions, and independent or ratio kinetic data. Meridian Instruments. Circle 142.

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Nalgene Micro Vials are for storage of polymerase chain reaction reagents, restriction enzymes, diagnostic and biochemical reagents, and samples. The 0.5-ml and 2.0-ml capacity vials have leakproof, threaded screw closures. There are no O-rings to fall out or contaminate contents. The vials are pressure-treated up to 7.5 PSIG. Molded of highpurity polypropylene copolymer, the singleuse vials can be centrifuged at 13,000g at room and refrigerated temperatures. The closure is available with a choice of nine polystyrene color coders for quick visual identification. The coders are provided separately in bulk quantities. Nalge Nunc International. Circle 143.

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### Gold PCR Enzyme

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plates for DNA sequencing, and those in which product yield and specificity are important. Perkin-Elmer. Circle 144.

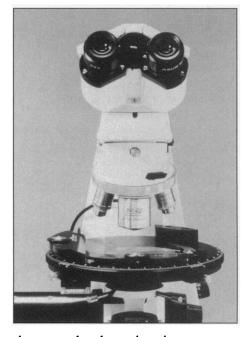
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**Digital Image Capture** Combining a Polaroid MicroCam SLR—a

low-cost, fully automatic instant camera for microscopy-with an inexpensive Polaroid PhotoPad digital scanner creates an affordable, high-resolution digital image capture system for microscopy. The system allows microscopists, researchers, and quality control personnel to create high-quality digital images of microscope specimens. The single-lens reflex camera can photograph any specimen through a light microscope. A sophisticated exposure and filtration control system produces high-quality instant photographs with push-button ease. Scanning an image requires only one step after the finished photograph is placed on the PhotoPad. The digitized image can be processed, analyzed, transmitted, and archived in an electronic database with any Twain-compliant application. Polaroid. Circle 145.

### **Scanning Probe Objective**

The ULTRA Objective turns an optical microscope into a scanning probe microscope by extending its resolution down to 1 nanometer. Micro- and nanostructures can be



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### Piezoelectric Accelerometer

The 25B is a miniature piezoelectric accelerometer with integral electronics. The instrument weighs only 2 grams and is designed to accomplish the most challenging vibration measurements on very small objects. Applications include vibration measurement in scaled models, small electronic components, and biomedical research. It offers a dynamic range of  $\pm 1000$  g and a voltage sensitivity of 5 mV/g. The small size and light weight effectively eliminate mass loading effects. Endevco. Circle 147.

### Green-Fluorescing Cyanine Dye

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### Literature

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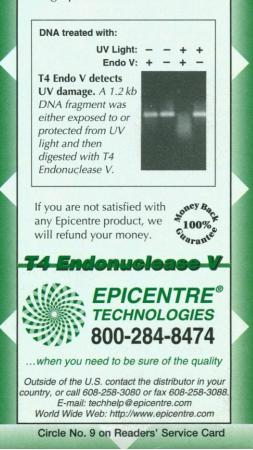
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# Doing DNA Repair Studies?

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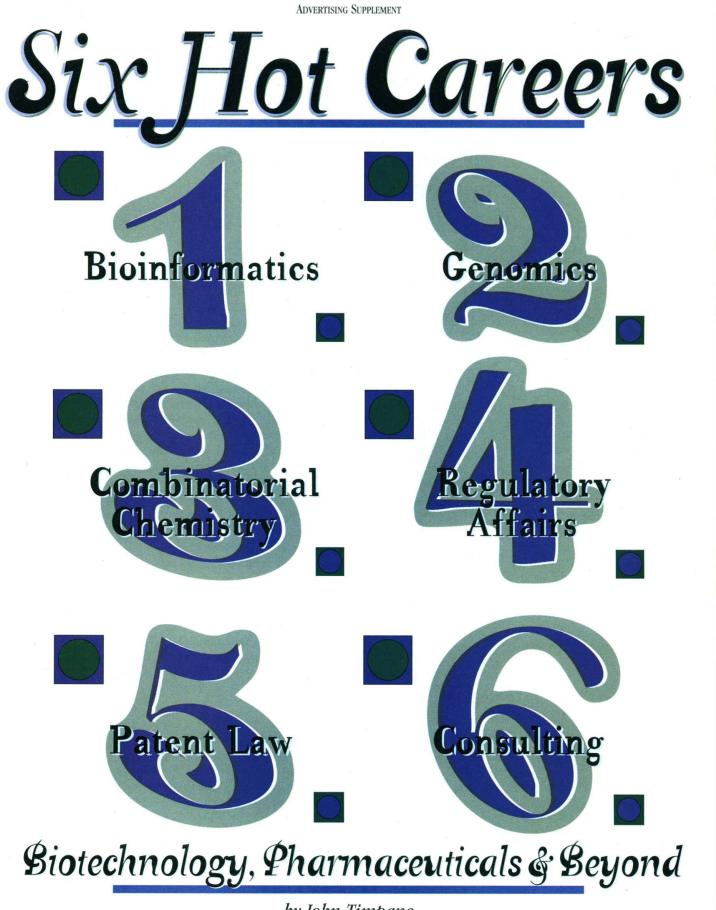
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> This issue of SCIENCE contains our advertising supplement devoted to six growing fields: Bioinformatics, Combinatorial Chemistry, Genomics, Regulatory Affairs, Patent Law, and Consulting for Life Scientists. See the following full page advertisers:

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Advertising Supplement





by John Timpane

ADVERTISING SUPPLEMENT

# HAT MAKES A HOT FIELD HOT? Answer: people need it. In looking for employment in the biopharmaceutical world, job-seekers constantly survey who's hiring and what fields

they're hiring in. The questions are: "How do my skills match up? What fields promise to be hot, not only now, but also in the next decade? What can I do to gear myself toward a career in a field of need?"

also promise to keep heating up: bioinformatics, genomics,

combinatorial chemistry, regulatory affairs, patent law, and consulting. The first three are relatively new; the second two are established career fields that have taken on new urgency in the current health care environment; and the sixth is little spoken of but has been around a long time. Scientists from Amgen, Cephalon, Human Genome Sciences (HGS), The

Institute for Genomic Research (TIGR), McKinsey & Company Inc., and NeXstar discuss what's happening in their fields and what it takes to get there. All of them display a warm enthusiasm for the opportunities for growth and career satisfaction in their fields-and that enthusiasm, just by itself, is adding to the heat.



Anthony R. Kerlavage, director of the department of bioinformatics at The Institute for Genomic Research (TIGR), says that his field covers "a lot of things," with two areas foremost: information management, the sheer keeping-up with the whelming tide of data unleashed by genomics; and research in computational biology, the evolution of new data analysis methods, new tools, new algorithms. "We write a lot of our own software," Kerlavage says, chuckling.

Bioinformatics is a hot career field because of the large amount of DNA sequence and protein structure data



We have chosen six fields that not only are hot now but that have become available in the last five years. Biopharmaceutical companies want to capitalize on these data to develop new drug targets.

> The biggest problem facing bioinformaticists? Sheer data volume. "It's easy to generate large amounts of new sequence data," Kerlavage points out, "but then it requires bioinformatics to direct follow-up research to what's important. We can help say where the important genes are and what their putative functions may be."

> Kerlavage calls his a field that has "sort of boot-strapped itself into being." There is still a pioneering, not to say ad hoc, feeling about it. Many of the biologists and chemists working in the field have taught themselves information science and computational science. More recently, as the software challenges have grown and clarified, computer scientists and engi-

neers have played a greater role. Cross-degrees are inevitably becoming more common. During a recent recruitment drive for software engineers, Kerlavage saw "a lot of BS people in biology and/or chemistry who went back and got an MS in computer science; they're ideal candidates. A fair number of PhDs have also retrained themselves or picked up the expertise on the job. There are also some computer science people who have taught themselves the biology."

Kerlavage himself was something of a ground-floor starter from the early days of DNA sequencing. With a PhD in biochemistry, he wended his way through protein chemistry and molecular biology, and ultimately, in "my own self-taught way," to computational biology. "It's pretty inevitable in DNA sequencing," he says. "You have to know how to use particular analysis packages and tools. As you start scaling up, the commercial and public domain software is inadequate, and you have to develop your own tools. You start with simple UNIX scripts to automate processes, then you get software engineers writing more robust tools for data manipulation."

As of 1996, generating sequence data has become fairly routine; the focus for now and the future is analysis of those data. While the complete sequencing of the genome (scheduled for around 2005) will be a great day for world science, Kerlavage realizes that making sense of that sequence will be an even greater challenge, extending generations of scientists into the future. "The two events will happen very far apart in time," he says. "We'll have a lot of sequence before we know very much about any of it. We'll have 3 billion base pairs, more than 75,000 genes. It will be decades of work before we truly understand it." But bioinformatics will be crucial to that effort. The process of primary analysis and annotation will not lag far behind the sequencing itself. The aim will be to give the biologists a "rough cut," a general idea of research directions. This is what Kerlavage calls "the prediction phase"-

John Timpane, PhD, writes frequently about the biotechnology and pharmaceutical industries.



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Sequana Therapeutics, Inc. is a leading genomics company dedicated to the discovery of genes associated with the pathology of common human diseases. We are currently seeking senior-level scientists for our gene discovery programs. Sequana has strategic alliances with Glaxo Wellcome. Boehringer Ingelheim and Corange International, and research programs in NIDDM, asthma, osteoporosis, obesity, schizophrenia, CNS and cancer. We are presently seeking the following talented individuals to contribute to these programs:

### BIOCOMPUTATIONAL SCIENTIST AND ANALYST

We seek a motivated Ph.D.-level scientist with demonstrated experience in molecular biology and computer science to manage and maintain sequence data. The selected candidate will support bench biologists in extending our existing sequence analysis pipeline, facilitating its use and improving throughput for novel experimental protocols. A good grasp of positional cloning methods and programming experience in C or Perl are required. Experience with ACEDB and standard sequence analysis methods/programs such as BLAST, GCG and GRAIL is desirable. (Job code: Sci/96-139)

### DNA SEQUENCING SCIENTIST

Responsible for carrying out "finishing" sequencing experiments, you will perform sequence analysis, assembly and editing of functions. We require a BS degree in biological science with 3+ years' experience in a molecular biology laboratory or equivalent. Strong DNA sequencing and analysis skills using automated DNA sequencers are a must. Prior project management and finishing experience is desirable. Mac OS and Unix proficiency preferred. (Job code: Sci/96-33)

### SEQUENCE ANALYST

This is an excellent opportunity to identify and characterize new genes associated with human genetic diseases. Working directly with laboratory scientists you will help determine the structure of gene candidates identified by positional cloning. This will require the ability to effectively communicate with laboratory groups and needs a good understanding of the use and limitations of currently available sequence analysis software. Programming experience in C or Perl required. (Job code: Sci/96-80)

### LABORATORY DATABASE ENGINEER (Biocomputational Scientist)

We seek a Laboratory Database Engineer to contribute to the development of our Laboratory Information Management System (LIMS). Our LIMS system is integral to the operation of our high-throughput genetics and DNA sequencing laboratories. Requires expertise in Sybase RDBMS, advanced SQL/Unix skills, and a background in the development of laboratory information management tools. Minimum of MS (or equivalent) in either Biology or Computer Science required. (Job code: Sci/96-146)

### SOFTWARE ENGINEER

We seek a software engineer to specify, design, schedule, implement and test software applications for molecular genetics research. The selected candidate will work closely with laboratory personnel and other developers. Together they will implement systems using Smalltalk, Perl, SQL, C, Java, distributed objects and object databases. Requires 5+ years' experience, biotech industry preferred. (Job Code: Sci/96-114)

### LIMS SUPPORT ADMINISTRATOR

We are looking for a Support Administrator for our Labatory Information Management database system. Our LIMS system is integral to the operation of our genetics and DNA sequencing laboratories, developed using Macintosh and Sybase RDBMS technologies. The candidate must have relevant laboratory exeperience, excellent communication skills and significant UNIX, SQL and Macintosh computer experience. Minimum of MS (or equivalent) in a relevant scientific discipline required. (Job code: Sci/96-136)

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when bioinformatics experts will work with biologists to focus the direction of research. "After all," he says, "you have to narrow the problems to be researched and the sites you want to address. The more you can do to make some sort of rudimentary prediction about what a particular gene will do, the easier the follow-up biology."

Kerlavage's department maintains constant contact with the hard science core of TIGR. "We're right in the thick of it here," he says. "Some may think of bioinformatics as a support function—here at TIGR, it's an integral part of the research process." That is why Kerlavage calls communications skills "very important" in this field. "We have to have a very open dialogue between biologists and computer scientists," he says. "You really have to be able to talk both ways. You can't stay on your side with little or no understanding of the other side."

Who has it harder—the biologist crossing over into computer science, or the computer scientist attempting to converse in biology? Kerlavage suggests that it may be the latter, but that there are learning curves for both sides, and both sides are essential. "It's just as difficult for a biologist to understand the hard-core principles of software development as it is for a computer scientist/engineer to engage deep biology," he says. "Biologists can write something to get us by, but to develop commercial-grade software that a laboratory can truly use, you need a highly trained software developer."

Undergraduate biologists should take some computer courses, including an introduction to software design and database design. Computer scientists should take fundamental biology and biochemistry courses. Kerlavage points to the increasing number of programs across the country, such as those at the University of Pennsylvania and at George Mason University, offering bioinformatics. "Biology and the computational sciences will continue to blend as we go on," Kerlavage says.

Toward that aim, faculty members at George Mason have created the Computational Science and Informatics program (CSI). The idea behind CSI is to give scientists a broad background in bioinformatics as well as intensive introduction to a special domain in science. The target audience includes people with computer science, mathematics, engineering, and physics backgrounds. Students earn a PhD in computational sciences and either physics, biology, or another specific scientific domain. Harold Morowitz is one



of the instructors in a three-term cram sequence in advanced introductory biology. "We see mostly engineers and computer scientists who want to get into bioinformatics but have no biology expertise," he says. "In our experience, it's more likely that biologists with an interest in this field generally have picked up computer science along the way."

CSI resulted from some farsightedness on the part of the George Mason faculty. "The university community felt that there is a need, in fact a large market, for people trained in both a domain science and computational science," Morowitz says, "and we wanted to provide that service. There aren't all that many growth areas in science right now, and this is certainly one of them."

# The Global Approach: Genomics at TIGR

"I didn't think of genomics *per se* as a field until recently," says Mark Adams, director of the TIGR sequencing facility. "I always thought of it as just a new approach to discovery science." Adams and many of his colleagues came to TIGR from Craig Venter's lab at NIH, where Adams worked with one of the first ABI sequencers. Since those days, genomics has definitely become a field unto itself.

"What distinguishes it from basic molecular biology," Adams says, "is the global approach. Rather than studying individual functions or processes, we're trying to get a grip on the complete genetic material of an organism through sequencing, and through structural, regulation, and expression studies."

TIGR is a nonprofit basic research institute. As Adams puts it, "It's a big genome-we do a lot of grant writing." As a company at the forefront of genomic research, TIGR has an 85 percent funding rate for its proposals. Genomics and bioinformatics have very much a love-and-marriage relationship. Sequencing technology has grown alongside informatics technology. Each has driven the other. "Technology has provided a way of accessing information on larger pieces of DNA than had been practical before," Adams says. He remembers the days when the largest organisms studied on a genomic level were viruses. The expressed sequence tag provided a way of accessing a large number of genes in the human and bacterial genomes. Now scientists can run tens of thousands of sequencing gels in parallel, with bioinformatic resources to interpret and synthesize the information.

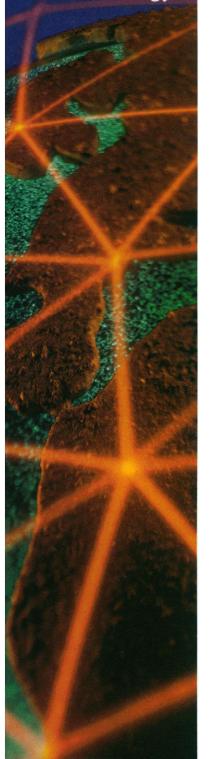
Despite this rapid advance, the field is, Adams feels, in its infancy: "A lot of the sequencing is really technology right now, which is interesting and useful—but if that were the only purpose of studying genomics, it'd be over once we're done. We'll soon have a tremendous resource for scientific investigation, using genomic approaches and information to ask some very interesting questions—long after the sequencing is done."

In this multidisciplinary field, rooted in molecular biology and genetics, Adams, who has a BS in chemistry and a PhD in biological chemistry, spends "about 90 percent" of his time in front of the computer. "It's an interest I've had going back to college," he says. "I even worked a couple of summers as a programmer. Being able to access and make sense of the data is a big part of this science. Having good computer skills really helps you get your hands around the information." Still, he calls himself a "pseudoprogrammer," very grateful for the six full-time software engineers in the TIGR bioinformatics department. "I can do little things for prototyping, experimenting, or trouble-shooting," he says, "but then I'll work with the software engineers to produce a more robust program."

Projects tend to be quite large and multidisciplinary. Teamwork and communications are key, Adams says: "You have to be able to describe what you're doing and your goals to people in a range of disciplines."

At the TIGR genomics labs, the postdocs and lab technicians tend to have life science backgrounds. "We look for a strong life science training and independent research experience," Adams says. "These people are critical links in maintaining quality, solving problems, and helping us develop methods as we go." Life scientists should have some computer science expertise. "We've found that it's easier to train computer scientists on molecular biology

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Direct a program of gene expression in pharmacologically relevant animal models. Requires experience in pharmaceutical drug development, specifically in animal model testing, plus a minimum of 2 years' experience in pharmacology/toxicology and familiarity with animal models for disease and efficacy testing. REF: ANI

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Assist in development of next-generation DNA analysis systems, chemistries and technologies. Mechanical engineering background with strong machine shop skills required, as is demonstrated prototyping experience with laboratory systems. Real-time/embedded data acquisition and control systems skills a plus. Positions available at both the BA/BS and Ph.D. levels. REF: TDE

#### **Technology Development Programmers**

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### Scientific Programmers/Senior Scientific Programmers

Develop graphical-based systems for displaying genome mapping information, including cross-platform (NT/Mac/UNIX) Intranet tools with JAVA and HTML. BS/BA in Science or Engineering required with 2+ years' professional experience with X11, GUI design and C and a strong background in Object-Oriented programming (Pref C++/JAVA) and UNIX scripting languages. Knowledge of client/server programming and PostScript is a plus. REF: RDG, 120

### **Information Science Engineers**

Support Incyte clients with effective acquisition, installation, maintenance and troubleshooting of desktop systems (Mac and PC) and network computing environments. You will also provide systems administration services and strong customer support. AS/BS in Computer Science or relevant discipline with broad background in computers and networks required. Mac and PC proficiency a must. Experience with sequence analysis software, good organizational skills and familiarity with Network protocols strongly desired. REF: 225

#### Programmers

Programming for software development projects. Will perform C, C++ and Perl coding. Write new programs and document, maintain and support others' code. Maintain production code, design and implement new procedures in production. Look for opportunities to automate current manual processes, develop SOPs and implement them into a production environment. Requires proficiency in system methodology and structured programming; familiarity with bioinformatics tools and HTML a plus. REF: 136, 155, 219

### Scientific Programmer/Senior Scientific Programmer

Develop Sybase-based systems for on-line processing and large-scale analysis of DNA sequence information, including cross-platform (NT/Mac/UNIX) Intranet tools with components in JAVA and HTML. BS/BA in Science or Engineering required in addition to 2+ years' professional experience with SQL and C and background in Object-Oriented programming (pref C++), GUI design and UNIX scripting languages. Experience developing computer applications for biomedical or chemical research is a plus. REF: 115

#### Senior Programmer/Analyst

Assist in systems design and management of automated sample tracking, QA/QC and DNA sequence processing systems using relational database and Intranet technologies. BS/BA in Science or Engineering required in addition to at least 5 years' experience with SQL and C/C++ and UNIX. Professional OO data-modeling experience, excellent communication skills and project-level team management required. Experience in developing computer applications for biomedical or chemical research is a plus. REF: 116

#### **Database Systems Administrator**

BS in Computer Science or relevant experience and 4+ years' experience in UNIX (Solaris/SunOS/SGI/DEC) systems administration primarily in a Sun environment and script level programming, Sybase and Oracle configuration and tuning and cross-platform client-server networking in a TCP/IP environment (PC/Mac/UNIX) required. HTML and Intranet server systems, software development skills (C/C++/SQL) and bioinformatics (GCG, Staden, BioSys and BLAST, etc.) required. REF: IS, 113

#### Senior Research Associate

Duties include RNA isolation, PCR, hybridizations and subcloning, FACS operation, isolation and culture of different primary cell types, and transfections. Related MS/BS and at least 3 years' post-graduate experience required. Experience in molecular biology, cell culture, cell analysis (FACS) and transfections also required. REF: 215

#### **Technical Advisor (CONTRACT)**

Perform technical writing of biotech patent applications, search and review pertinent scientific literature and assist with technical aspects of patent prosecution. BS in Biology or relevant scientific field with 2+ years' related bench work required. REF: 199, 200, 201

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than it is the other way around," Adams says. Postdocs tend to have some computer science experience, more on the data analysis and interpretive side than on the project management side. TIGR also hires quite a few programmers, few of whom have life science backgrounds.

Automation is an increasing aspect of the genomics lab. "People in robotics have an edge," Adams says, "because there are more and more off-the-shelf robots and robot parts to deal with, in combinatorial chemistry in particular." As the data come pouring in, new opportunities will open up for engineering and software design.

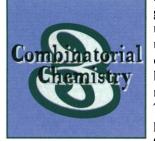
Adams enjoys the give and take among different sciences and skills. "Formal computer science training approaches problem solving in dealing with large data sets and thinking in n-dimensional states, something molecular biologists don't ordinarily do," he says. "It's very useful to have that kind of cross-disciplinary communication. Likewise, some molecular biology problems dealing with information are interesting and challenging for computer scientists. One of the hallmarks of genomics, why I really like it,

is that you're looking at something without a lot of preconceptions. It's new. With the *H. influenzae* genome, we didn't go in with a great number of preconceptions. What we got back was the absolute set of the genes required for the life of that organism. To apply that knowledge to what we know about the organism is tremendously powerful."

For those interested in genomics, Adams suggests that they "get on the Web and see what's out there." Many universities and institutes supporting genomics studies have fascinating presentations. "They're good introductions to the science as well as really interesting for the sheer complexity of the information," he says. "They're a good way to determine whether you're really interested in the field."

# Spotlight on Combinatorial Chemistry: Cephalon, Amgen, NeXstar

It's one of the fastest-growing of all biomedical technologies, one that has revolutionized the search for compounds both in chemistry and biology. It's name is combinatorial chemistry, and different companies are putting it to a range of different uses. Below, three combinatorial chemists discuss this field and the career opportunities within it. Their outlooks show that these technologies are intensely exciting—and intensely different in the bands of different companies.



# A Primer on the Field: James Kauer of Cephalon

James Kauer, vice president of chemical technology and co-founder of Cephalon, has watched the phenomenal growth of combinatorial chemistry in only five years. He defines it as "the term applied to a group of techniques used for the simultaneous synthesis of large groups of chemical compounds." In the past, individual compounds were synthesized one at a time and were carefully purified and characterized. "Doing it that way," Kauer says, "a single chemist could generally synthesize and characterize no more than five or ten compounds per month. Using the new techniques of combinatorial chemistry, a chemist can synthesize hundreds of compounds per month."

Richard Houghton, one of the pioneers in this field, showed the feasibility of this approach using the peptide technology of Bruce Merrifield. Later, people realized it would be possible to do the same with small molecules using solid-phase technology, much like Merrifield's technology, to run sequences of reactions. About three and a half years ago, a series of meetings began, in which practitioners got together and traded notes. Companies began to advertise for these skills.

"In parallel synthesis, which we're most interested in at the moment, a large number (5-50) of reagent molecules are allowed to react with another large group of substrate molecules to produce a matrix of combinatorial products," Kauer says. "This procedure may be repeated several times, perhaps using different types of chemical reactions in successive steps. In general, only the simplest purification techniques are practical. For this reason, combinatorial syntheses are frequently carried out with one reagent or a group of reagents attached to an insoluble support, such as resin or glass beads. These unreactive reagents may then simply be washed away. Rapid analytical procedures with small sample requirements (e.g., mass spectroscopy) are employed."

Most of the work today is directed at the production of organic molecules for pharmaceutical or agricultural applications, but in principle the techniques may be applied to inorganic synthesis and applications outside of the life sciences. Combinatorial chemistry is best used in conjunction with a high-throughput screening program and a sophisticated data handling system so that useful "hits" can be identified quickly and optimized. In principle, the active sites of enzymes or cellular receptors can be explored with a random collection of molecules of different size, shape, charge distribution, or lipophilicity.

Combinatorial chemistry can also be employed to optimize already identified lead molecules. "I think that this latter application will be particularly fruitful, since many worker hours are currently employed in lead optimization in the pharmaceutical industry," Kauer says. "A complementary technique, phage display, which you might think of as combinatorial molecular biology, makes use of virus particles containing random genetic sequences to synthesize libraries from the 20 coded amino acids."

Kauer expects that in five to ten years, these will be the standard tools of medicinal chemists. "Combinatorial chemistry and high-throughput screening," he says, "will by then have taken their place alongside other technologies (x-ray crystallography of enzymes and receptors; rational drug design based on identifying origins, mechanisms, and progressions of disease) useful in the development of drug and agricultural chemical leads."

Kauer notes the rush to join the fray, with most of the large chemical and pharmaceutical companies establishing a presence in combinatorial chemistry. Smaller contract companies are springing up to provide chemical libraries, peptide combinatorial synthetic services, synthetic equipment, or data handling facilities. A few companies now provide all of the above. In addition, a small cottage industry has Nothing justifies the pursuit of scientific discovery more than the human need it seeks to cure. At Pfizer, that commitment is represented by more than \$1.5 billion dedicated to research and development annually, and the intellectual and technological resources that have proven themselves unequaled in the industry. The result is that people are greatly benefiting from our introduction of six major new drugs in the U.S. in as many years, with many more in late-stage development. As a Fortune 100 company, our resolve to deliver critical pharmaceutical innovations for major unmet medical needs is strengthened with each life we've helped to improve. And that's all the evidence we need. For more information on the impact we're making in people's lives, see us on the Internet at: http://teure.pfizer.com.

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even sprung up providing combinatorial chemistry meetings and symposia at about \$1,000 a participant.

Cephalon is currently building a combinatorial chemistry synthetic group, as well as a high-throughput screening facility. "By the end of the year," Kauer says, "we'll be spending \$300,000 to \$400,000 on instrumentation to carry out the parallel syntheses, including reaction instruments, purification instruments, and sample-handling equipment, plus the computer tie-in to keep track of what's happened and where you are." Keeping track gets to be a serious problem, especially considering the need to track high-throughput screening.

What of the job-seeker in this field? "Basically," Kauer says, "I think people should have good old-fashioned classical synthetic skills with emphasis on solid-phase chemistry—and small-molecule (600-700 molecular weight) synthesis is where the strides are currently being made." Beside that, because so much instrumentation is involved, they need good mechanical and tinkering ability to evaluate, operate, and install computer instrumentation. "Somebody who is simply 'good on computers' but not good with a screwdriver might be a bit lost," Kauer says. "If an applicant has a hobby of taking apart and fixing computers, that's an encouraging sign. Teamwork skills are important, especially the ability to work with biologists, instrument makers, and data handling experts."

# Information Dreams: Combinatorial Chemistry at Amgen

Theodore Jones, lab head of the new leads discovery program at Amgen, Boulder, notes that traditional ways of searching for new compounds relied heavily on existing sample banks. "Combinatorial chemistry has been a godsend for the smaller companies because it allows you to develop a sample bank competitive in numbers to those of large pharmaceutical companies," says Jones, "which in some cases have been amassing their banks for decades." Even more exciting, it allows scientists to combine chemistry and biotech protein technologies in new ways. "On one hand, we can create proteins, clone receptors, and make a variety of biological targets," he says. "On the other, we have this new ability to attack those targets with large numbers of small molecules."

With a PhD in organic chemistry, Jones started with Amgen in 1982, when DNA synthesis was in its infancy. He helped develop Amgen's DNA core and peptide core production group and has recently helped initiate the combinatorial chemistry group. Fifteen years of experience in resin-based synthesis from the DNA and peptide efforts stood him in good stead. "We produce 25,000 oligonucleotides and 2,000 peptides for internal use each year," he says, "so we have a special knowledge base in resin-based chemical synthesis and high-throughput synthesis, and we've developed a lot of our own robotics as we've gone along."

Organic chemistry is a must for both graduate and undergraduate job seekers. So are a familiarity with resin-based chemical synthesis and very strong computer skills. "When you're doing this many syntheses, it can be a nightmare of information management," Jones says. Since there is not as yet much good off-the-shelf instrumentation, almost everyone is custom-designing their own robotics and reaction vessels. "We need to develop both hardware and software to run these processes," he says, "so the ideal candidate would have both a chemical background and strong engineering skills, overlaid with strong computer skills."

Since such people are rare, Jones creates interdisciplinary teams whose members combine talents. In the process, each team member develops expertise in all fields. Jones notes that "many applicants don't have the required communication abilities, and it affects their hireability." No single person does the entire process, so all intermediaries must keep in touch: "If you're going to be handing off compounds

at the rate of 500, 1000, or 10,000 at a pop, you need to know who's getting them (a sample bank group? a highspeed screening group?), what they'll be doing with them, and what their needs will be."

Those interested in combinatorial chemistry should get strong organic chemistry and computer skills in school. Practical experience is difficult to acquire, although schools such as UCLA and UC Berkeley are creating programs. "Many of our recent hires are coming out of the peptide field," Jones says, "those who develop resin linkers, the chemical modification of peptides on resin. Such people really are developing the same skills necessary for what we do."

# Leveraging the Libraries: Risk and Asymmetry at NeXstar

When the topic is combinatorial chemistry, Bruce Eaton, vice president of research chemistry at NeXstar Pharmaceuticals in Boulder, Colorado, speaks with great enthusiasm and a little impatience with the way things usually are done. "People in industry generally select classes of pharmacophores that are compatible with a predetermined paradigm with some known biological activity," he says. "But we're looking at a new paradigm and new targets that other companies haven't considered."

Eaton, who says he loves the risk-taking and dynamic interaction of working at a small company like NeXstar, says that combinatorial chemistry has become significant because "everybody wants to push the traditional drug discovery time frame (seven years if you're lucky) down to two years or less. What is truly expensive is the clinical failure. What we want is a discovery process with a biological endpoint, so that it's much more likely that a lead turns into a real drug."

Although such a process is where industry wants to go, no one is close as yet. In search of that process, NeXstar scientists are using a parallel SELEX method with an amplifiable iterative nature. "The goal is to amplify a small-molecule library back up and reiterate through the cycle," Eaton says. "We can help avoid the 'weak lead' problem because we're not doing a single-pass selection any more. We can increase specificity and may be able to counterselect for adverse biologic interactions such as toxicity."

Where other companies avoid reactions that create asymmetric compounds, NeXstar embraces asymmetry. "We're leveraging the libraries," Eaton says, "turning to advantage the retrosynthetic strategies most people avoid." He sees an increasingly strong alliance between medicinal chemistry and combinatorial technologies. "That will be to what we're doing today as binary computing is to neural nets," he says.

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Statistical Geneticist: Ph.D. with interest in parametric and non-parametric approaches to the analysis of complex traits. Ideal candidate will also have a strong interest and demonstrated experience in the area of genetic map construction and issues related to the analysis of linkage disequilibrium data. JOB CODE: 96-SCSG1H

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**Genotype Analyst:** B.S. or M.S. in statistics or genetics needed to assist team in addressing genetic map issues, conducting haplotype analysis, and genotype error analysis. Experience in genetic analysis and/or molecular genetics is highly desirable. Computer programming skills and knowledge of UNIX are beneficial. JOB CODE: 96-SCSGAH

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This individual will join a multi-disciplinary team to work on cell and tissue events related to the inflammatory process. The successful candidate will study the mechanism of drug action, screening, lead compound evaluation, cytokine regulation, and signal transduction pathways. You will also develop and lead novel mechanism-based drug discovery projects. Requirements include a Ph.D. in Life Sciences (Pharmacology, Molecular Biology, Physiology, Cell Biology or Biochemistry) and typically 5 years' related research laboratory experience. A leadership background in small molecule drug discovery, the molecular mechanism of drug action and anti-inflammatory drugs is mandatory.

### LABORATORY HEAD

### (Job Code BPSC 8697)

This position is a leadership role in our Molecular Biology Research group. Duties include identifying, cloning, expressing, and mutating genes involved in the inflammatory process. Identification of new targets for small molecule drug discovery, signal transduction, endothelial cell and macrophage activation, differential expression and yeast 2-hybrid technology are important functions of this position. A Ph.D. in Molecular Biology or equivalent and typically 7 or more years' related work experience in a laboratory or research environment are required. A strong background in management, project leadership and proven technical expertise are essential.

### **RESEARCH ASSOCIATES (2 positions)**

### (Job Code BPSC5428)

This position involves the purification and characterization of natural and recombinant proteins, lab maintenance, and record keeping. A Bachelor's degree in Life Sciences or related field is required (MS in Biochemistry preferred). Experience in protein purification, column chromatography, gel electrophoresis, western blotting, and HPLC is required. Experience in enzymology and cell culture is desirable.

### (Job Code BPSC5443)

The individual selected for this position will conduct experiments, organize data, analyze results, and will be involved in the establishment of pre-clinical models for Rheumatoid Arthritis. A Bachelor's degree in Immunology, Microbiology or related field, and 5 or more years' related post-graduate research experience are required (Master's in Immunology preferred). Experience with pre-clinical models, ELISA, tissue/cell culture and molecular biology (i.e., isolation of RNA/ DNA) is required. Experience with transgenics or knockouts is a plus. Scientists with a Ph.D., an extensive background in Immunology or Microbiology and post-doctoral training are encouraged to apply.

At Amgen, you'll find our approach as rewarding as it is effective. We offer a highly competitive compensation and benefits package. Please mail your resume to: **Amgen, Boulder, Human Resources, Job Code:** (see above), P.O. Box 19409, Boulder, CO 80308-2409. Call our Job Hotline at 800-446-4007 for information on other career opportunities available at Amgen. Principals only, please.

### THOUSAND OAKS, CALIFORNIA

### **MEDICINAL CHEMIST**

Candidates will have a record of accomplishment at a major pharmaceutical company and demonstrated skills in small molecule drug discovery and drug development. This position requires a Ph.D. in Organic Chemistry and 5-10 years' experience in the pharmaceutical industry.

### **COMBINATORIAL CHEMIST**

Competitive candidates will have 2-4 years' experience in the implementation and management of a small molecule combinatorial chemistry effort. A Ph.D. in Organic Chemistry and 5 years' experience in the pharmaceutical industry are essential. Technical skills in the area of automated solid phase organic synthesis are highly desirable.

### **MASS SPECTROSCOPIST**

The selected individual will have experience in the administration of a mass spectroscopy laboratory. A Ph.D. in Chemistry and typically 5 years' experience are required. Experience in high-throughput analysis of combinatorial libraries is particularly desirable.

### **RESEARCH ASSISTANT/ASSOCIATE SCIENTIST**

Responsibilities include the generation and characterization of transgenics to identify new drug candidates and targets. This position requires a BS or MS degree in Life Sciences and 5-10 years' experience in the production of DNA constructs and the management of multiple lines of transgenics. A Molecular Biology background that includes PCR, cloning, DNA preparation, founder analysis, and northern/southern/western blot analyses is critical. Strong verbal and written communication skills and the ability to organize and handle multiple tasks are essential. Experience in characterization of transgenic phenotypes, genetics, or ES cell culture is preferred.

At Amgen, your accomplishments are rewarded. We offer a highly competitive compensation and benefits package that includes a retirement and savings plan. For immediate consideration, mail your resume to: Amgen, Staffing, Job Code: TPSC, P.O. Box 2569, Thousand Oaks, CA 91319-2569. E-mail: jobs@amgen.com. Consult our Job Bulletin Board at amgen.bio.com for more information on other career opportunities available at Amgen. Principals only, please.



### ADVERTISING SUPPLEMENT

NeXstar's combinatorial group is currently 20 strong, a mix of molecular biologists, biologists, biochemists, and chemists. All goals and objectives overlap; materials and problems are shared in what Eaton calls "a completely interdisciplinary" way: "Everyone understands that the real excitement in science today is at the interface of the traditional disciplines. That's going to be the future too." Teamwork, process-orientation, and communication are present and future necessities. "If you can't work in a team," Eaton says, "you're going to fail. There is no way a lone scientist can do it all." With leads thick on the ground right now, the proof is in preclinical and clinical studies. Even the discovery researcher, therefore, must think ahead to product development and IND issues.

Written and spoken communication is the key," Eaton says, "as is being able to communicate in the language of different disciplines. We have molecular biologists here who can discuss reaction mechanisms and transition states and care about it, and we have chemists who understand the interplay between different biological targets."

Eaton recommends courses not only in organic synthetic chemistry but also in pharmacology, medicinal chemistry, biochemistry, and molecular biology. He especially recommends specialty courses in signal transduction-"anything, in short, that can prepare you for the multidisciplinary science we're doing now." As is perhaps obvious, Eaton is on fire with the idea that the whole of biomedical research is aimed at understanding the molecular basis of disease. "As we get better at these technologies, we'll be able to implement our strategies more successfully, get better at predicting toxicological and immunogenic effects of compounds, help identify the truly powerful leads. Everybody is going to win."

# The Privileged View: Regulatory Affairs at Amgen

"Regulatory affairs is the one group in the whole company that has the opportunity to know what all the other groups do. It gives us a privileged overview of the process.

That's why I left research. I was living in a defined world of doing assays every day. For me, being in regulatory gives me the sense that what I do makes more of a positive impact on the company than what I was doing in the lab."

That is Jeff Fellows, manager of regulatory affairs for

Amgen. Like many people in regulatory affairs, Fellows left the bench for the broader view. "We're the grand orchestrators," he says. "Much of what we do is pulling together

relevant people, information, and time lines. In some respects, we guide the drug development process. A company's ability to get a product to market determines success. We help get that compound through the entire development phase."

Regulatory affairs is the science and art of understanding the development process and being able to apply the known regulatory guidelines to it. "On one hand, you're trying to comply with FDA requirements," Fellows says. "On the other, you're trying to maintain the company culture, which in our case means looking for creative ways to get things done." Amgen's good record of getting from the preclinical to the clinical phase is evidence of success on both hands.

Fellows emphatically agrees that this is a science-based job: "To explain, defend, or justify a process, to answer questions, to formulate the key issues, you have to know the science and be able to communicate it to the FDA and other agencies." Scientific rationale must be generated for each step, each test, each claim in developing a product. "You need scientific data supporting the action and efficacy of the compound," he says. "You need at least some preliminary toxicological studies. You need to develop a set of GMP guidelines. Definitely, you need to know the science behind the product-but I have known English majors who have made fine careers in the field as well."

Fellows earned a BS in microbiology and spent two years doing protein purification, bioassays, and radiolabeling before moving into regulatory at his first company, NeoRx Corporation. "In my case," he says, "it was a matter of being in the right place at the right time. I knew people in the regulatory group at NeoRx, and I had an older brother who worked in the field at another company, so I had a fairly good understanding of what the job would be. I was ready to make a change, and the position opened up and worked out." With regulatory groups in both Thousand Oaks, California, and Boulder, Colorado, Fellows enjoys the travel his job entails. "Everyone in this field has a great deal of hands-on work, as well as personal contact," he says. "I really enjoy those aspects."

That job is a highly skilled one, and many of the skills called for are people skills. Teamwork goes without saying-but the regulatory affairs person must also be able to function independently, develop his or her own strategies and sell them to the team. Research skills are also necessary. "We learn the history of the issues, how Amgen and other companies have handled them in the past, and we develop a solid base of information from which to create a viable strategy," Fellows says. With the increasing flood of information, computer skills are more in demand-"more than just word processing," in Fellows's words, "but understanding of physical processing." Regulatory is above all an excellent place for those who want to keep learning new things. "Every week," he says, "I learn something new, face a challenge without an answer."

Perhaps the central skill in regulatory affairs is a skill all scientists develop: that of breaking a problem down into component parts, discovering the core of the problem, and developing a solution. Another skill is the ability to tolerate and appreciate grey areas. Even though local, state, and FDA regulations are printed in black and white, most of the important issues exist between the lines and become matters for negotiation. "You are," says Fellows, "looking for a solution without being dogmatic."

That means negotiating skills. Interaction with government functionaries is constant, and regulatory affairs people learn to respect them and to take their role seriously, while at the same time representing the company. "They may not totally understand our product," Fellows says, "and it's our job to educate them to the ins and outs so that we have a





### Announcing an Initiative in Human Genetics at the Wadsworth Center

### **Chief of Human Genetics**

We seek a human molecular geneticist with demonstrated excellence in research and administration to spearhead this initiative. The successful candidate will build upon existing research into the molecular genetics of model organisms and the resources of the Department of Health's newbom screening program.

### **Chief of Genetic Epidemiology**

We seek a scientist to develop population-based analysis of genetic variants associated with common inherited disorders. The successful candidate will have a vision for utilizing newborn screening specimens for allele frequency analyses with an impact on public health.

Appointments are also expected for intermediate and junior level scientists with a minimum of three years postdoctoral experience. Areas to be developed are:

human molecular genetics molecular epidemiology population genetics clinical genetics biometrics The Wadsworth Center is launching an initiative to harness the power of genetics to benefit the 18 million people of New York state.

Successful candidates will join a stimulating intellectual community of 170 doctoral level scientists who work at the intersection of science, medicine and public health. These leaders of the genetic future will enter an organization that values its long history of excellence in research and service, from the discovery of introns in prokaryotes through the development of recombinant vaccinia virus as a vaccine vector to a pioneering program of laboratory certification.

Those excited at the prospect of defining the impact of genetics on a diverse population and engaged by the ethical, legal and social issues associated with genetic testing, should consider these resources of the country's most comprehensive public health laboratory:

- an active research program in the genetics of model organisms, ranging from yeast through fruit flies to mice,
- core facilities that include automated DNA and peptide sequencing and synthesis, transgenics, cell banks, NMR, x-ray crystallography and a nationally supported microscopy resource
- access to the unbiased test population of specimens from one of the country's largest newborn screening programs
- opportunities to collaborate with clinicians from Albany Medical College and with genetic service providers funded by the NYS Genetic Services Program
- faculty appointment at the School of Public Health, State University of New York at Albany

To be considered, please forward a resume to: Dr. Marlene Belfort, Director of the Division of Genetic Disorders, Wadsworth Center, New York State Department of Health, PO Box 22002, Albany, NY 12201-2002. The Wadsworth Center is an affirmative action/equal opportunity employer. Women and minorities are encouraged to apply.

# **Wadsworth Center**

New York State Department of Health

meaningful discussion." Good negotiators have in common a patience with bureaucracy, as well as the ability to identify the core of a disagreement and find a common ground.

Few regulatory affairs people are hired right out of college. They tend to come from other areas of the company, or from other companies—from manufacturing, quality assurance and quality control, even basic research. Cross-functional degrees abound, especially in law or business. Fellows, who has considered getting an MBA, occasionally wishes he had a higher degree in the sciences.

For those interested in a career in regulatory affairs, Fellows strongly suggests the following:

• WRITING CLASSES, BOTH TECHNICAL AND NONTECHNICAL. "So much of what we do is written communication," Fellows says. "One right word choice can make all the difference."

• PUBLIC SPEAKING CLASSES. Regulatory people give constant internal and FDA presentations, at which they represent the company.

• COURSES ON FDA REGULATION OR PRODUCT DEVELOPMENT. Some universities and colleges are now giving such courses, and there are frequent industry seminars and meetings.

• A SUMMER INTERNSHIP IN REGULATORY AFFAIRS. "Some companies do offer these," Fellows says, "and they may look kindly on students who indicate this as an interest. If you're interested, seek them out."

# "New, Useful, & Not Obvious": Robert Benson & Patent Law at Human Genome Sciences

For Robert H. Benson, vice president, general counsel, and secretary of Human Genome Sciences (HGS), patent law is both self-evident and indispensable. "Basically," he says, "you're trying to preserve for creators and inventors the rights to their discoveries and inventions." The ambit of patent law includes trademarks, which indicate the source of goods and services; copyrights, which protect a specific form of expression; and patents, which are, by Benson's definition, "agreements between

an inventor of something new, useful, and not obvious and society whereby in return for disclosing that invention, the inventor receives a period of exclusive rights to use it commercially." Patents cover both the form and the underlying key concepts of an invention.

Benson has helped spearhead patent law at a company that has been a trailblazer in the field of biotechnology. He is an eminently credentialed scientist and lawyer, with a PhD in biochemistry and molecular biology and a JD. Law had always been a hobby, and as an assistant professor of biochemistry and molecular biology, he had even done a radio show on the law. When he attended a seminar at the University of Houston on the ethical implications of

applied genetic engineering, he became friends with the seminar leader, Leonard Riskin, who suggested law school. Benson, a very funny man, says, "I laughed and said, 'Well, I'm not doing anything at night for the next five years,' so I took the LSAT, applied, got in, and went to school at night while teaching."

Although patent law is important everywhere, its importance is perhaps most apparent in the biopharmaceutical industry. If a company cannot get a patent on a drug lead, it cannot justify the cost and time spent in development, and it probably will not develop the drug. "In a company with limited resources, as most are," Benson says, "you put your development efforts where you have patent protection. It's the only way a small enterprise can protect itself against a large enterprise."

Benson thinks of patent law as being in and of itself a very productive field, very much parallel with the underlying science it protects. "Although we don't create the science," he says, "we process, patent, promote, and protect it. That's the beauty of

a winner-take-all system. The brass ring goes to whoever gets there first, the assumption being that they'll be best at promoting it." HGS, which has demonstrated that a small company can grow large in great part because of a strong patent law department, is a case in point.

When asked whether he uses his formidable scientific training on the job, Benson says, "Sixty to 70 percent of my activities involve scientific decision-making. The law for me is a study of how humans have addressed conflict, actual or anticipated. In any area of technology in which there are opportunities for conflict, you need to be able to understand both technology and the law. You have to look at what your scientists have done, and also all the related scientific literature and patents by others—to find the boundary of what's new in relation to what's known before. You can claim in your patent only what is new. And you have to do all that"—here he laughs—"while drafting the patent application!"

Scientific knowledge also comes into play during the patent prosecution process, in which the attorney argues over the claim language with the patent examiners: "You're constantly driven back to the fine points of the science to provide a legal basis for the claims you're asserting." Benson and his colleagues spend a great deal of time with research scientists and inventors, having them explain their brainchildren. "It's a lot of fun," Benson says. "In the lab, you can do only so much research work—but as a patent attorney, I get to experience literally hundreds of lifetimes of research work. When I was a student, I didn't know this life existed."

There are a couple of routes into patent law. One is the direct route, via a JD or a Masters in Patent Law, available at law schools such as George Washington University and



George Mason University. But the preponderance of biotech patent attorneys are academic retreads adding a cross-functional degree: "We work by day and go to law school at night." To tackle the patent bar, applicants must have 24 hours of a technical education in physics, chemistry, biology, engineering, or another scientific

domain. Some people become patent agents (who can prepare patent applications and can handle patent appeals to the US Patent Office but cannot go into court). By working at a patent law firm or in a company, patent agents often finance law school, which allows them to become patent attorneys.

"New, useful, and not obvious"—a formula that befits science and patent law both. Benson, both practitioner and pioneer, finds it endlessly enjoyable, with an inexhaustible supply of new challenges. "I could talk about all sorts of challenges and the pleasure of using the intellect in analysis and argument and so forth," he says, "but the real thing is—I just like learning."

# Howard Hughes Medical Institute

# Fellowships for Biological and Biomedical Sciences

The Howard Hughes Medical Institute announces the 1997 competitions for fellowship programs that support training in fundamental biological and biomedical research. Awards, based on international competitions, focus on research directed to understanding basic biological processes and disease mechanisms. Fellowships may be held at academic or nonprofit research institutions.

### **Predoctoral Fellowships in Biological Sciences**

Up to five years of support for full-time graduate study toward a Ph.D. degree in biostatistics, cell biology, epidemiology, genetics, immunology, neuroscience, or structural biology. Applicants must not have completed the first year of postbaccalaureate graduate study in biology. *Application deadline: mid-November*.

### **Postdoctoral Research Fellowships for Physicians**

Three years of support for training in fundamental research subsequent to at least two years of postgraduate clinical training and no more than two years of postdoctoral research training. *Application deadline: mid-December*.

### **Research Training Fellowships for Medical Students**

An opportunity for medical students in the United States to explore a burgeoning interest in fundamental research. Support is awarded for one year of full-time fundamental research in a laboratory at the student's medical school or another institution (except NIH in Bethesda, Maryland). *Application deadline: early December*.

### **Research Scholars at the National Institutes of Health**

Under this joint HHMI–NIH program, medical students in the United States spend an intensive year in research in the intramural program at NIH in Bethesda, Maryland. Residence is provided at the Cloister on the NIH campus. *Application deadline: early January*.

### **1997 Program Announcements and Applications**

For Predoctoral Fellowships: Hughes Fellowship Program The Fellowship Office National Research Council 2101 Constitution Avenue Washington, DC 20418 United States of America Telephone (202) 334-2872 Fax (202) 334-3419 E-mail <infofell@nas.edu> http://www.nas.edu/fo/index.html For Other Programs:

Howard Hughes Medical Institute Office of Grants and Special Programs Department AL97 4000 Jones Bridge Road Chevy Chase MD 20815-6789 United States of America Telephone (301) 215-8889 Fax (301) 215-8888 E-mail <fellows@hq.hhmi.org> http://www.hhmi.org/grants/graduate/start.htm

The Howard Hughes Medical Institute, an Equal Opportunity Employer, welcomes applications from all qualified candidates and encourages women and members of minority groups to apply.

Wanted: Committed, ambitious scientist. Must be a team player with a vision for the future. M.D./Ph.D., Ph.D., M.S. or B.S. degree necessary.

# Does this describe you?

If it does, then plan to attend the bioSCIENCE Career Fairs sponsored by SCIENCE. The bioSCIENCE Career Fairs offer the perfect opportunity for scientific professionals to meet in person with representatives from top biotechnology and pharmaceutical companies, universities, governmental agencies and institutions.

### Next 1996 bioSCIENCE Career Fair

Palo Alto, CA on the Stanford Campus in Palo Alto, Oct. 4-5 Tresidder Memorial Union/Oak Lounge and Cypress rooms

Oct. 4: 11 am - 4 pm Oct. 5: 11 am - 3 pm

To pre-register, please submit your resume or CV via fax: (202) 289-6742, or via e-mail: bioscience@aaas.org. Please remember to bring multiple copies of your CV or resume with you to the Career Fairs, a copy will be necessary to register. Admission to the event is free.

*For more information* Please call (202) 326-7018



bioSCIENCE Career Fair Information On-Line: http://www.sciencemag.org (Choose SCIENCE Classified Advertising from the menu)

Do not contact Stanford University directly. They are not responsible for organizing this event.

# "A Special Kind of Person": Consulting at McKinsey & Co.

In our list of six hot fields, consulting may have seemed the odd one out, strange mates with genomics and bioinformatics. But in fact, highly trained scientists in many fields, including the life sciences, are sought after as consultants both in and out of science. After all, what is a consultant if not a highly trained, highly skilled thinker for hire? And scientists are some of the best thinkers, imaginers, and problem-solvers available.

In August 1994, Suman Shirodkar, now an associate at McKinsey & Company Inc., was completing her PhD in tumor biology under David Livingston's direction at Harvard. Her thesis work concerned RB and its related protein P107 in interaction with E2F in the cell cycle. She was studying for the US medical examinations and shopping for a residency, with an MD/PhD and a research career in the middle future. In her last year of graduate work, McKinsey came to recruit. After hearing a friend say some good things about McKinsey, Shirodkar attended some of the recruiting sessions. "My interest grew with each step of the process," she said. To her surprise, at the end of the applications and interviews, McKinsey made an offer, and she accepted.

Karen Kidder, associate director of recruiting, describes McKinsey as "a leading international management consulting firm that works with the senior management of corporate organizations on their most important problems, as well as government and not-for-profit organizations." The word *problems* can include strategy, operations, or organization. "Our mission or goal," Kidder says, "is to help companies perform better—to make successful companies even more so, and to help ailing businesses turn around."

Taking the consulting route was "a difficult, personal decision," Shirodkar says. "Believe me, there are times when I really miss research. But I know now that it was definitely the right move." Part of her decision was the long

path ahead of her, through residency and academic science, a possible postdoc, and medicine. Another part was the personable, concerned professionalism of the interview process. "They wanted to make sure, not only that I was right for them," she says, "but also that this career would right for me."

Vikram Narasimhan, also an associate, was a postdoc in Ernest Peralta's lab at Harvard when he learned of McKinsey. Although he was and still is in love with science, the bloom was off the rose. "I'd

spent a great deal of time doing research," he says. "I had to ask myself, 'Do I want to go on to become faculty, get into the tenure track situation?' I found myself less than excited about the prospect." When he learned of McKinsey he was, like Shirodkar, motivated by the quality he saw. "I was impressed by the qualifications of some of the consul-

### ADVERTISING SUPPLEMENT

tants," he said. "They really seemed to be the crème de la crème." So he began the interview process. "Along the way," he says, "the people I met bolstered the sense that this was a place where quality people went to do quality work."

Associates at McKinsey can opt to be generalists, or they can do as Shirodkar did, and specify a field of expertise—in her case, health care. Although his first engagement was in health care, Narasimhan prefers a broader field: "Now I'm more reckless," he says, chuckling. "I wander into areas I know little about, and hope that my consulting savvy will help me do well."

The typical "engagement" lasts four to six months. Associates work on one engagement at a time, seeing it through from definition to solution. "It's very factbased, analytically driven," Kidder says. "We take a scientific, hypothesis-generating approach."

McKinsey has long sought PhD-level talent from a variety of fields, in the theory that clients are best served by experts of diverse backgrounds and trainings. "We could, as our clients do, rely on MBAs," Kidder says, "but this way we are distinctive, richer in the answers we provide, by broadening our base." Experience has shown that associates with advanced degrees perform "just about as well" as their MBA counterparts. Last year, about 40 percent of recruits worldwide had graduate degrees other than MBAs. The application process includes a thorough review of the applicant's résumé and a "résumé supplement," followed usually by three rounds of interviews.

Your basic tools are your analytical problem-solving skills. "Often, you're faced with a large, amorphous, poorly defined problem," Shirodkar says, "and you have to master it somehow. That's what we do in science all the time. We break a large problem into smaller parts and structure our analysis and data gathering efforts around each piece." Helping health care companies address their problems requires modeling techniques, forecasting, and market research. "At the end, much as in science, you bring the pieces back into a coherent picture," Shirodkar says. "Unlike academic research, there are well-defined endpoints and goals, and you can see the impact you're having, often in a very immediate fashion." A recent client needed to improve the number of patients they treated while controlling costs and improving patient satisfaction. Shirodkar's group came up with five pilot projects. "I just heard that all our pilots are now full-blown successful projects at the company," she says. "That's truly satisfying."

While professional scientists think of themselves as specialists, both Narasimhan and Shirodkar point out that scientists share a range of skills and abilities across disciplines. "The ability to be analytically rigorous, logically consistent—these are skills that are valuable anywhere," says Narasimhan. Shirodkar agrees. "Problem solving, the ability to disaggregate a problem, thoroughness, the power to rationalize conflicting data—these aren't things you put on your résumé," she says. "In fact, usually you don't know you have them." Narasimhan and Shirodkar agree that they are both still learning, about science and about much else. "It's a very exciting pro-



fession if you truly enjoy learning about things," Narasimhan says. "You'll work with a textile mill today, a computer company tomorrow. Over time, you discover an underlying simplicity. You're looking for patterns—and finding them."

"This job isn't for everybody," Kidder says. "It's for entrepreneurially-minded people who like big challenges, who like teamwork, solving problems, and helping others. It can be extremely rewarding in terms of what you learn, and the impact you can have at a comparatively young age. It can also be rewarding financially. You have to like change: you

work on something 5-6 months, then you're on to a completely new client, new problem, new challenges. Not everyone likes that. It takes a special kind of person."

And what do Shirodkar and Narasimhan, two top-class scientists-turned-consultants, do in their spare time? "I take a cup of coffee, sit outside, and brush up on my journals," Narasimhan says. Shirodkar does the same: "I still subscribe to all of them, and they take up my weekends."

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PALO ALTO, CA STANFORD UNIVERSITY CAMPUS • OCT. 4-5. 1996

PROGRAM GUIDE October 4: 11am -4 pm

October 5: 11am -3 pm

The following organizations are interviewing at the October 4-5 bioSCIENCE Career Fair. See their recruitment ads in this issue for details on scientific career opportunities.

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### **bioSCIENCE** CAREER FAIR

### Expanding Minds

### Improving Bodies

Here at Chiron, we are on the leading edge of biotechnology research and scientific advancement, producing an array of therapeutic and diagnostic tools to advance potential cures for cancer and serious infectious diseases. We currently have the following opportunities:

### Manager, Diagnostics Process Validation

Your specific duties will include development of validation strategy and process design and task management of product-specific validation activities for the manufacturing process. You will advise on new product development and provide ongoing product support.

To qualify, you must have a BS in a biological science (with an emphasis on molecular biology, biochemistry or immunology), 5+ years' experience in process validation of biological, biochemical, immunological and mechanical processes, and 8+ years' experience in an FDA-regulated environment involving in vitro diagnostics. Also required is experience with biochemical, immunochemical and/or nucleic acid chemistry techniques; recombinant antigen production (fermentation, purification, synthesis of peptides, and E.I.A. technology); and knowledge of GMP, QA/QC principles, and U.S. regulatory requirements. Management experience and computer knowledge are desired. Job Code #EM1708.

### **Molecular Toxicologist**

You will conduct bench-level research in the area of molecular toxicology. Your responsibilities will include examining gene and protein expression in common target organs following exposure to known and unknown toxicants; developing new molecular assays; examining the interrelationship between specific gene induction and functional or structural alterations in various cell types; and establishing a database to enable molecular markers to be used as predictors of toxicity. You will also have the opportunity to participate in drug development teams.

To qualify, you must have a Ph.D. with 2+ years of experience, broad-based knowledge of cell and molecular biology, an understanding of toxicology, and experience with cell culture systems and in vivo models. Job Code #EM1769.

### **Scientist or Post-Doctoral Position**

In this challenging position, you will be responsible for the identification and study of novel growth factors involved in early embryonic development — particularly that of the vascular and nervous systems.

To qualify, you must have a proven record of research achievement and scholarship, a Ph.D. or equivalent and post-doctoral training. Our ideal candidate will also possess a strong background in molecular biology techniques applied to developmental biology. Job Code #95-402.

If you have the dedication, spirit and flexibility to rise to our many challenges, send your resume, indicating Job Code of interest, to: Chiron Corporation, Human Resources, 4560 Horton Street, Emeryville, CA 94608. We are an equal opportunity employer. Principals only, please.



# Bristol-Myers Squibb Fosters Careers in Research.

### Oncology - Research Scientist Histopathology

Successful candidate must have a B.S. or M.S. degree in a related field with at least 2-4 years experience. The primary responsibility for this position is the generation, processing, embedding and sectioning (paraffin, frozen and plastic) of embryonic and adult tissues, and their staining for different histological stains and immuno-cytochemical markers. Overall experience in histopathologic techniques including preparation of stain and antibody solutions, quality control for tissue sections and solutions and the keeping of records and protocols is also required. Additional experience in electron microscopy techniques, radioactive and non-radioactive in situ hybridization will be considered an asset. This position is based in Princeton, NJ. Reply to Dept. # BM-AS.

### Oncology - Research Scientist Cell Cycle

Successful candidate must have a B.S. or M.S. degree with at least 2-4 years experience, preferably in the pharmaceutical industry. Must have a working knowledge of molecular biology techniques (DNA cloning, PCR, western blotting, immunoprecipitation, protein expression, protein purification). Additional experience in one or more of the following areas desired: cell cycle, ELISA and enzyme assays, cell biology, eukaryotic cell culture. Responsibilities will include assay development for enzyme activity and protein: protein interactions, development of model cell lines and compound evaluation. This position is based in Princeton, NJ. Reply to Dept. # BM-378.

### Oncology - Research Scientist Tissue Culture

Successful candidate must have a B.S. or M.S. degree in a related field with at least 2-4 years experience. The primary responsibility for this position is the cultivation of embryonic stem (ES) cells and establishment of ES cell lines. Overall experience in tissue culture techniques including maintenance of proper sterile procedures (routine mycoplasma and bacteria testing), quality control for tissue culture supplies (fetal calf serum, calf serum, defined media) and the keeping of records and protocols is also required. Additional experience in transfection techniques, blastocyst aggregation and manipulation of embryos will be considered an asset. **This position is based in Princeton, NJ. Reply to Dept. #BM-TC.** 

For Princeton, NJ positions, please forward/fax your resume with Dept. #, to: Bristol-Myers Squibb Pharmaceutical Research Institute, Human Resources, P.O. Box 11279, Trenton, NJ 08620-0279. FAX: 609-581-8841.

### Immunological Diseases -Research Investigator

Successful candidate must have a Ph.D. in Cell Biology, Biochemistry or Chemistry with emphasis on protein characterization and at least 2-4 years postdoctoral experience. As part of our growing team of scientists in Biological Process Research, you will be responsible for the characterization of potential protein drug candidates. We will depend upon your ability to independently design experiments leading to the creation and validation of methods (ELISA, bioassay and affinity chromatography). You will write standard operating procedures and methods to solve problems with Biological Processes and assist Quality Control and Operations groups by performing and interpreting assays. **This position is based in Seattle, WA. Reply to Dept. #96500.** 

For Seattle, WA position, please forward/fax your resume with Dept. #, to: Bristol-Myers Squibb Pharmaceutical Research Institute, Human Resources, 3005 First Avenue, Seattle, WA 98121. FAX: 206-727-3606.

### Infectious Diseases -Research Scientists/Investigators

Successful candidate must have a B.S. or M.S. degree in Biochemistry for the Research Scientist positions, and a Ph.D. degree for the Research Investigator positions, with at least 2-4 years hands-on experience in protein isolation and enzymology, preferably with a microbial background. We are also seeking candidates with a B.S. or M.S. in Molecular Biology with at least 2-4 years hands-on experience in cloning, sequencing, PCR and other standard techniques. Familiarity with microbial genetics is desirable. Join our Drug Discovery efforts as we expand a dynamic, interdisciplinary group dedicated to the discovery of new antibacterial, antifungal and antiviral therapeutics through the identification of new targets and design of screens for inhibitors. **These positions are based in Wallingford, CT. Reply to Dept. #HD-104.** 

### Combinatorial Chemistry -Research Investigators

Successful candidates must have a Ph.D. in Organic Chemistry with at least 2-4 years industry or lab experience and a synthetic organic concentration. Proficiency in the use of robotic instrumentation in connection with automated synthesis is essential. The ability to develop and design methods for automated synthesis of organic compounds and apply these methods to the preparation of target compounds is necessary. **These positions are based in Wallingford, CT. Reply to Dept. # HD-96191.** 

For Wallingford, CT positions, please forward/fax your resume to: **Bristol-Myers Squibb Pharmaceutical Research Institute, Human Resources, P.O. Box 5101, 5 Research Parkway, Wallingford, CT 06492-7661. FAX: 203-284-7762.** 

Bristol-Myers Squibb Company

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Stop by our Booth during the bioSCIENCE Career Fair in Palo Alto, October 4-5.

# **Research Scientists**

Respiratory Medicinal Chemistry: PhD in Organic Chemistry with 0-4 years' experience in small molecule organic synthesis. Job# SCI927KH-A

Respiratory Disease: PhD in Biology or Molecular Biology with experience in the construction and characterization of transgenic and knockout mice for disease modeling. Job# SCI927KH-B

# **Postdoctoral Position**

T Cell Development: Requires PhD with experience in Molecular/Cellular Biology. Job# SCI927KH-C

# **Research Associates**

PharmD/Preclinical R&D: BS/MS degree in Chemistry with 0-8 years' experience, including providing analytical and formulation/manufacturing support. Job# SCI927KA-D

Pharmacology-Gene Targeting: BS/MS in the Life Sciences or comparable degree in Molecular Biology, Pharmacology, Biochemistry, or Neurobiology, along with 1-5 years' experience. Job# SCI927KH-E

In-Vivo Pharmacology: BS/MS degree with 3-5 years' experience analyzing, testing and validating pharmaceutical agents and transgenic expression on lung function. Job# SCI927KH-F

Asthma Research: BS/MS degree with a range of 1-5 years' experience demonstrating strong molecular biology techniques and experience with DNA database searches. Job# SCI927KH-G

Medicinal Chemistry: BS/MS degree in Organic Chemistry with 1+ years' experience and familiarity with synthetic and analytical techniques. Job# SCI927KH-H

Chemical Development: BS/MS degree in Chemistry with 0-5 years' process development experience. Job# SCI927KH-I

# Systems Analysts/Programmers

Opportunities are available for candidates with BS/BA degrees in Computer Science, Physical or Biological Science and several years' development/programming experience, including expertise in several of the following areas: Oracle 7, Forms 3.0/4.5, VMS, and/or UNIX. Previous lab experience a plus. Job# SCI927KH-J

Located in the San Francisco Bay Area—close to Stanford University and near scores of biotechnology companies—Roche Bioscience offers a highly attractive salary, a full benefits package, including relocation assistance, plus a unique environment that rewards accountability, new ideas and courageous decision-making. If you would like to explore our opportunities firsthand, apply today by sending your resume to: **Roche Bioscience, (indicate Job Number), 3401 Hillview Avenue, Palo Alto, CA 94304. Fax 415/424-8159.** You may also see us on the WWW at: http://www.roche.com/bioscience. We are an equal opportunity employer committed to a workforce diversity.

# There's more to Allergan than meets the eye.

If you think Allergan's expertise is limited to quality eye care products, it's time you gave us another look. We're a highly respected global leader in the development, manufacture and marketing of pharmaceutical drugs for a variety of neuromuscular disorders as well as eye and skin care. Currently, we're making dramatic advances through our generous commitment of funds for R&D.

Join our New Products Development team as we continue to explore innovative approaches to glaucoma, cataracts, neuro-muscular disorders, contact lens care and receptorselective retinoids.

Our determination to meet the current and future health care needs of the world has created the following opportunities in Southern California:

### Senior Scientist-Toxicology

You will plan, schedule/implement acute, subacute and chronic toxicology studies for developing protocols; supervise lab staff; analyze study results; direct and/or monitor in-house and contract labs; write research reports; compile data summaries; ensure compliance with GLPs and upgrade, maintain and validate computer data captures.

Requires a Ph.D. in Toxicology or D.V.M. and 5 years of industrial experience or toxicology contract lab or related field experience. D.A.B.T. preferred. Familiarity with regulatory and general toxicology principles/theories/concepts as well as the ability to utilize various laboratory instrumentation and computer systems for data reduction/evaluation. Writing and verbal communication skills are essential.

### Electrophysiologist/Scientist

We require a Ph.D. and proficiency in database management and computational techniques for quantitative analysis of electrophysiological responses. Strong interpersonal, analytical and verbal/written communication skills along with good detail orientation are essential. We prefer 2+ years post doctoral/industry experience, and understanding of Visual System anatomy and neurobiology. We also prefer familiarity with models for disease of the retina/visual pathways as well laboratory and clinical techniques for measurement of visual system function including electroretinography and visually evoked cortical potentials.



The following opportunities are also available:

Clinical Research Associates Director, Project Management Quality Assurance Administrator Regulatory Affairs Analyst Sr. Packaging Engineer Sr. Project Engineer (Mechanical)

Please stop by our Booth at the bioSCIENCE Career Fair in Palo Alto.

We reward our employees with a competitive salary, an excellent benefits package and a great working environment. To learn more about these and other opportunities with Allergan, please send your resume to: Allergan, Human Resources Dept., Attn: Joyce Smith, 2525 Dupont Dr., T2-1B, Irvine, CA 92612. Equal Opportunity Employer.



# POSTDOCTORAL AND STAFF Research opportunities

### POSTDOCTORAL RESEARCHERS

The Genentech Postdoctoral Program consists of more than 50 Researchers and is a vibrant and intensive environment for advanced scientific training. Postdoctoral Researchers conduct basic research in the areas of our scientific interest, publish in scientific journals, and attend and present work at scientific meetings. All candidates should have a PhD and/or MD degree with a strong background in the appropriate field.

### **Endocrine Research**

A position is available to explore the metabolic consequences of hormonal gene knockout or attenuation in models of human disorders, including disease and trauma. See Journal of Clinical Investigation 95:2258–2265 (1995); Endocrinology, Vol 1 (3rd ed), pp 280–302 (1995). Manager: Dr. Michael Cronin. Reference: PDMC

### Neuroscience

A position is available to define the role of neurotrophic factors and eph tyrosine kinase receptor ligands in the survival, differentiation, axon guidance and synaptogenesis of CNS neurons. See Neuron, 14, 973–981 (1995); Ann. Neurol 38, 30–37 (1995); J. Biol. Chem. 269, 27679–27686 (1994); Neuron 7, 695–702 (1991); Neuron 4, 767–773 (1990). Manager: Dr. John Winslow. Reference: PDJW

A position is available to study the actions of trophic factors on neuronal survival and function in the central nervous system. Trophic effects on basal forebrain cholinergic neurons and midbrain dopaminergic neurons are under investigation by a combination of molecular, neuroanatomical, behavioral, and biochemical techniques. See Neuron 13, 1245–1252 (1994); Cell 76, 1001–1011 (1994); Nature 382, 76–79 (1996) ibid, 382, 80–83. Manager: Dr. Heidi Phillips. Reference: PDHP

### Pharmacokinetics & Metabolism

A position is available to study the mechanisms of uptake and intracellular transport of growth factors, focusing on understanding the specific function(s) that ligands targeted to the nucleus play(s) in the overall biological response of the cell. Manager: Dr. Gilbert Keller. Reference: PDGK

### **Cardiovascular Research**

A position is available to focus on the regulation of angiogenesis, investigating the role of VEGF and other factors in normal and abnormal angiogenesis by molecular, cellular and in vivo approaches. See Science 246, 1306 (1989); Science 255, 255 (1992); PNAS 89, 698 (1992); Nature 362, 841 (1993); NEJM 331, 1480 (1994); Nature 380, 439 (1996). Manager: Dr. Napoleone Ferrara. Reference: PDNF

In this position, you will be responsible for defining the role of plasma carboxypeptidase in regulating fibrinolysis. A general knowledge of the molecular basis of fibrinolysis and blood coagulation is highly desirable and a protein chemistry, cell and molecular biology background is required. See J. Clin. Invest. 96, 2534–2538 (1995); Biochemistry 34, 5811–5816 (1995); J. Biol. Chem. 266, 21833–21838. Manager: Dr. Dan Eaton. Reference: PDDE

### Cell Culture

A position is available to work on novel strategies for increasing the secretion efficiency and glycosylation of recombinant proteins. Experience in yeast or mammalian cell transport and secretion required. Previous research interest in SNARE proteins (VAMPs, syntaxins, synaptotagamins, synaptobrevins, Rabs), glycosyl transferases, Golgi processing enzymes, chaperonins, or synaptic transmission would be helpful. Manager: Dr. Phil Berman. Reference: PDPB

A position is available to apply genetic techniques to address problems of polypeptide translocation and periplasmic protein folding and recombinant proteins. Experience with the design and implementation of genetic selection and screens in prokaryotic backgrounds is required. See Biochem 33, 4231–4236; PNAS 91, 4703–4707. Manager: Dr. John Joly. Reference: PDJJ

### **Bio-organic Chemistry**

A position is available to join an interdisciplinary team studying protein-small molecule binding energetics and the design of peptidic or non-peptidic inhibitors of protein-protein interactions based on structural and mutational strategies. A background in organic synthesis and the ability to conduct routine structural characterization by NMR is required. See J. Am. Chem. Soc. 106, 5077–5083 (1994); Science 267, 383–386 (1995). Manager: Dr. Robert McDowell. Reference: PDRM

### STAFF RESEARCHERS

### Scientist — Protein Characterization

You will collaborate with researchers in fermentation and cell culture process development. Requires a well documented ability to conduct independent research (e.g. PhD or publication record), excellent communication skills and experience with one or more of the following: HPLC of proteins and peptides, affinity chromatography, analysis of protein structure, function or mechanism. Experience in the analysis of protein glycosylation or other post-translational modifications is required, as is knowledge of protein mass spectrometry, electrophoretic methods of separation, cell culture or microbial fermentation. Reference: MCFJ

### Senior Research Associate

You will be responsible for intracellular transport and processing of recombinant glycoproteins, and the characterization of breakthrough viruses in individuals in HIV-1 vaccine trials. Primary responsibilities will include cloning, sequencing and mutagenesis of cellular and viral proteins, quantification of RNA expression levels and characterization of transfected mammalian cell line. Requires a BS and 5+ years of post-graduate molecular biology or mammalian cell culture experience; experience with RT-PCR. Northern Blots, automated sequencing, ELISA assays, RIPs or liganc binding assays would be helpful. Reference: MCPB

### Research Associate — Cell Culture

Project will focus on neuronal cell culturing and position will perform microdissections. Requirements include a BA/MA in Biology or a related life science with a minimum of 2–3 years of directly related experience in molecular biology, cell culture or immunoassay skills. Reference: JODS2

### See us at the bioScience Career Fair, Palo Alto, CA, October 4–5.

Genentech offers an excellent salary and benefits package which includes free health club membership, 3 weeks paid vacation. 6 weeks sabbatical after every 6 years, and fully paid medical, dental and vision coverage. Please send your C.V. (For Postdoctoral positions include 3 letters of recommendation) to Genentech, Inc., Human Resources, Attn: Reference (see code in above job descriptions), 460 Pt. San Bruno Blvd., South San Francisco, CA 94080. If possible, please avoid bold, underline or italic type faces. You may also e-mail your resume with the Reference code to jobs@gene.com (ASCII files only with a maximum line width of 76 characters). Check out additional job opportunities available at Genentech on line at http://www.gene.com. Genentech is an Equal Opportunity Employer. We value the contributions of our diverse workforce.

### Research Associate — Neurons

Project will examine the development and survival of midbrain dopaminergic neurons, including examining the in vitro survival of dopaminergic neurons in the presence of various peptide growth factors. Responsibilities will include fine dissection of developing embryos, cryostat sectioning, immunohistochemical staining, and in situ hybridization. Requirements include a BA/MA with 2–3 years of laboratory experience in primary tissue culture, experimental embryology, cell injection, cryostat sectioning, histological techniques, image analysis and morphometry and molecular biology. Reference: JOMH

### Research Associate — Fermentation Development

You will carry out analysis as needed on fermentation samples; find and learn new techniques for biochemical and microbiological analysis; plot and analyze fermentation data, helping to maintain databases containing fermentation methods and results and assist in designing and performing related experiments using lab techniques drawn from microbiology, biochemistry, molecular biology and genetics. Additionally, you'll prepare fermentation instructions, prepare inoculum vial lots and perform some engineering research and microbial physiology research as needed. Requires 2+ years of lab experience and knowledge of microbiology and biochemical techniques (protein analysis and separation skills), HPLC operation, microbial physiology and simple molecular biology techniques. Master's degree preferred. Reference: MCBSNE

### **Research Associate — Pharmacokenetics**

In support of the development of recombinant proteins for clinical applications, you will develop animal models of diseases; and work closely with others to design, conduct and analyze results of in vivo physiological experiments investigating the mechanism(s) of action of drug candidates. Requires a BS/MS in Physiology or Pharmacology with experience in in vivo physiological studies or development of animal models of disease. Surgical skills, good record keeping and 2–4 years of experience with small laboratory animals in an academic or industrial environment are highly desirable. Reference: MCSB3

### Research Associate — Protein Biochemistry

You will be responsible for the daily smooth management of a multidisciplinary lab. The successful candidate must be proficient in several areas of modern biology, including: protein biochemistry, receptor biochemistry, anatomy and histology. Requirements include a BA/BS or MA/MS in a life science with experience in protein biochemistry, receptor biochemistry, animal surgery and histology. Proven experience with focused projects is essential, as are team orientation, organizational skills and self-motivation. Experience with protein chemistry and immunochemistry desirable. Reference: JOMC2

### Research Associate — Protein Chemistry

You will be responsible for the purification and characterization of large numbers of recombinant proteins. A BS/BA in biological sciences is required, along with several years of experience working with proteins. Extensive experience with the purification and characterization of proteins is required along with familiarity with all kinds of chromatographic procedures including affinity, ion exchange and size exclusion chromatography. Experience with SDS gel electrophoresis and other basic protein characterization techniques is required. Familiarity with setting up ELISA-type and fluorescence assays is desirable. Reference: EODV

### Research Associate — Protein Engineering

You will experimentally pursue and understand molecular interactions of proteins in an interdisciplinary group using a variety of laboratory methodologies to develop new therapeutics. Experimental approaches integrate technologies from protein chemistry, molecular biology and structural biology. Requires a BS/MS and 3+ years of technical experience in areas relating to protein chemistry (purification and characterization), molecular biology (mutagenesis, DNA sequencing, expression in bacterialmammalian systems), enzymology and structural biology. Reference: EOBL

### Research Associate — Bio-organic Chemistry

You will perform organic chemistry research in the area of drug design and synthesis: conduct multistep synthesis to afford desired targets, characterize all intermediates and communicate the results, and work independently to provide input into the design of the synthetic targets, using both solid phase and solution synthetic methods. Requires an MS/BS in Chemistry, preferably with at least 2 years of synthetic organic chemistry experience in the pharmaceutical industry. Experience with modern chromatographic and analytical techniques (including HPLC, NMR and MS) is essential, as is an interest in database setup/management. Familiarity with computers (Macintosh preferred) and software such as ChemDraw and File Maker Pro desirable. Reference: EODJ

### Research Associate — Animal Behavior

Project will focus on cellular and biochemical mechanisms of nociception. This position will primarily involve behavioral and histology skills, and will require a BA/MA in Neurobiology or a related discipline and prior experience working with assays of rodent behavior. Preference will be given to those with prior experience in nociception related behavioral assays. Knowledge of molecular biology, immunoassay or cell culture skills is a plus. Reference: JODS1

### Research Associate — Pharm. R & D

You will support research and development of dosage forms/delivery systems for protein drugs by performing studies that include physical and chemical characterization of proteins with regard to compatibility with pharmaceutical excipients and delivery systems, as well as the design of manufacturing processes and assessment of dosage form stability. Requires BS/MS or equivalent with heavy emphasis on physical/analytical concepts. Experience with proteins and a fundamental knowledge of analytical biochemistry or pharmaceutical manufacturing techniques (Spectroscopy, HPLC, gel electrophoresis, etc.) are essential. At least 1–3 years of industrial experience in pharmaceutical formulation or process/manufacturing R&D or 1–3 years of industrial/academic experience in protein physical biochemistry, analytical biochemistry or engineering is also desirable. Reference: MCTN

### Histotechnologist

You will provide technical expertise and support as a histotechnologist with primary focus in immunohistochemistry. Responsibilities include performing routine immunohistochemistry, optimizing antibodies and maintaining the database and tissue banks. You must have demonstrated knowledge of all standard histologic procedures, as well as specialized techniques such as cryotomy and plastic processing. **An AA/BS and HT/HTL (ASCP) certification are required**, as well as expertise in histotechnique, microscopy and immunohistochemistry. Reference: JDRT

# Genentech, Inc.

# Biology at Sequana Therapeutics, Inc.

Sequana Therapeutics, a leading genomics company dedicated to the discovery of genes associated with common human diseases, is seeking senior level scientists and research associates to join a rapidly growing functional genomics program in the Biology department. We have research programs in the areas of NIDDM, asthma, osteoporosis, obesity, schizophrenia, CNS and cancer.

### Molecular and Cell Biology

We have two Ph.D. level positions in Functional Genomics for Molecular and Cell biologists. As well as having excellent scientific skills, you will be expected to work effectively as part of a team assigning function to genes isolated by positional cloning that predispose individuals to genetic disease the successful candidate for one position will have a thorough working knowledge of gene expression and secretion in E. coli. Experience in production of panels of mouse monoclonal antibodies and their use in Elisa assays and as reagents for localizing proteins in cells and protein purification is required for the other position. (Job code: Sci/96-90/92)

### Yeast Molecular Geneticist

We seek a yeast molecular biologist to join a team building novel transgenic animal models of human genetic diseases. This Ph.D. level position requires extensive yeast molecular genetics experience with an emphasis on gene cloning and plasmid construction, meiotic recombination, and modification of plasmid and genomic sequences in yeast. Experience analyzing mammalian DNAs cloned in YACs and BACs is highly desirable. (Job code: Sci/96-86) Transgenics Research Associate

A microinjectionist research associate position is available in the transgenics group. A BS degree with 3+ years experience in DNA pronuclear microinjection and blastocyst injection of ES cells is required. Versatility at small animal surgery and genotyping and tracking of transgenic lines is highly desirable. (Job code: Sci/96-85)

### •Research Associates•

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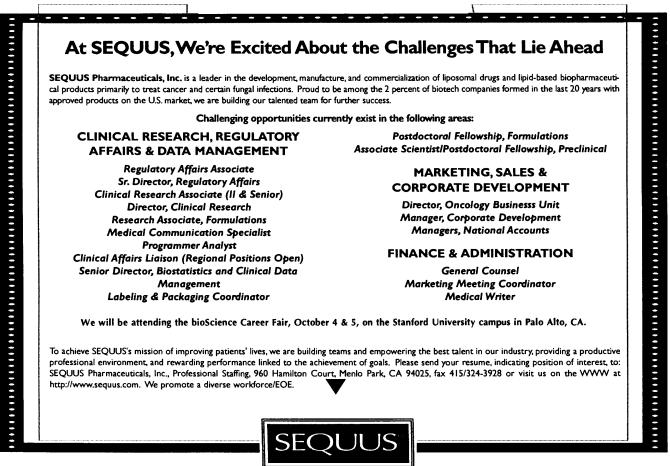
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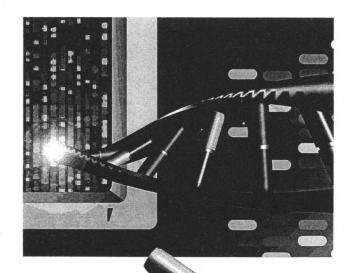
Several positions are available at the Research Associate level to join the scientific teams described above.



Sequana Therapeutics, Inc. is a publicly-held corporation headquartered in La Jolla, CA. Our executive offices and laboratory facilities are located in a science park across from the Scripps Research Institute, about one mile from UCSD and The Salk Institute. We offer a highly competitive salary plus stock options, and relocation assistance where appropriate. Please mail or fax resume to: Sequana Therapeutics, Inc., Att: HR/ Code (see above), 11099 North Torrey Pines Road, Suite 160, La Jolla, CA 92037. Fax: (619) 452-1907. We are an equal opportunity employer.www.sequana.com







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### SENIOR/STAFF SCIENTIST PCR

We seek an individual to join a multi-disciplinary team responsible for research and development of all aspects of *in Situ* amplification and hybridization techniques, including cell and tissue preparation, amplification chemistry, and detection. The successful candidate will design and implement basic analytical experimentation aimed at understanding, standardizing, and commercializing the various steps required for successful *in Situ* analysis.

You must possess a PhD in Cell Biology, Biochemistry, or Analytical Chemistry with a minimum of 3-5 years' relevant research experience. Hands-on research experience working with cells and tissues, *in Situ* hybridization, and basic molecular biology/biochemistry techniques is required. Solid verbal and analytical skills and a strong publication record a must. Ref: S-3987.

### SCIENTIST III/SENIOR SCIENTIST PCR

This individual will be responsible for the research and development of Research Applications Kits and Enzymes/Reagents revolving around Nucleic Acid Amplification Technologies. The successful candidate will assist in designing and implementing basic analytical experimentation aimed at understanding and commercializing nucleic acid amplification for the research market.

The ideal candidate must possess a PhD in Biochemistry or Molecular Biology and a minimum 2-3 years' relevant research experience with nucleic acid amplification technology, DNA replication systems, proteinnucleic acid interactions, protein chemistry, and basic enzymology. In addition to hands-on experience in basic molecular biology techniques, protein purification/characterization, and enzymology, you must possess good verbal and analytical skills and a strong publication record. Ref: S-3990.

### SENIOR PRODUCT SPECIALIST PCR Service

This individual will develop and implement worldwide service support for SDS and PCR products. You will be responsible for ensuring successful

product introductions and on-going support of products, as well as the support and training of Field Service Representatives.

You must possess a BS in Science, Chemistry, Engineering, Engineering Technology, or related discipline with at least 5 years' field service experience. Proven expertise servicing thermal cyclers is required; experience with other ABD instruments is highly desirable. In addition to excellent communication and Macintosh skills, you must possess the ability to work with minimum supervision. Off-site travel will be required. Ref: S-5414

### SYNTHETIC ORGANIC CHEMIST

We seek a self motivated Synthetic Chemist (PhD) with strong chemical intuition to join a multi-faceted team of engineers, biochemists, computer scientists, and marketers at our Foster City, California site. You will handle challenging synthetic projects with research involving the design and synthesis of new fluorescent compounds and intermediates, ring forming reactions, aminations, hydroxylations, halogenations, etc.

New dyes will be aggressively patented and marketed in this position. You must possess experience in structure/spectroscopy relationships of fluorescent dyes and chromatographic (normal and reverse phase, Flash, HPLC) separations. A background in heterocyclic synthesis is also desirable. Publication and presentation of your research will be encouraged. Ref: S-5205.

We will be attending the bioScience Career Fair on the Stanford University campus in Palo Alto, CA, on October 4 & 5. Representatives will be on hand to discuss these and other career opportunities.

In exchange for your talents, we offer a competitive salary and benefits package with advancement potential for your career. For consideration, please send your resume, indicating appropriate reference, to: PE Applied Biosystems, 850 Lincoln Centre Drive, Foster City, CA 94404. You may also fax to 415/638-5874, email us at biocareer@perkinelmer.com or see our home page on the WWW at http://perkin-elmer. com for more details. PE Applied Biosystems is an equal opportunity employer.

# **PE** Applied Biosystems

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# The Cutting Edge of Drug Discovery

Arris Pharmaceutical Corporation is focused on the discovery and development of a variety of small molecule therapeutics for existing markets where current therapies have significant limitations. As an innovative biopharmaceutical company, we are delivering promising preclinical drug candidates to our business partners that satisfy safety & efficacy criteria. At the same time, our integrated discovery technologies continue to broaden our rich product pipeline, creating a number of exciting career opportunities for a handful of talented researchers to join us at the cutting edge of drug discovery.

**SCIENTISTS (Ph.D. level)** • Structural, Combinatorial, Synthetic/Medicinal Chemistry, Pharmacology, Pharmacokinetics, Drug Metabolism, Infectious Diseases, Cell Biology, and Group Leader - Protein Expression.

**RESEARCH ASSOCIATES (BS/MS level)** • Combinatorial, Synthetic/ Medicinal Chemistry, High Throughput Screening, Fermentation & Cell Culture, Purification, Pharmacology, Infectious Diseases, and Cell Biology

For more information on specific job openings, please stop and see us at the **BioScience Career Fair** being held **October 4th & 5th at Stanford University**, or check out our Web site at www.arris.com.

Arris offers extremely competitive salaries, full benefits, attractive equity participation and career advancement opportunities within a progressive, growing company. For consideration, please forward your resume to:



Arris Pharmaceutical Corp. Human Resources Attn: Job# SM0927-RAS 385 Oyster Point Blvd., Suite 3 South San Francisco, CA 94080

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Geron Corporation, located in the San Francisco Bay Area, is pioneering new approaches to treat age-related diseases including cancer. Geron is the first biotechnology company to focus exclusively on the development of therapeutic agents for age-related diseases emerging from new advances in molecular and cellular gerontology. These diseases include atherosclerosis, senile dementia, age-related immuno suppression and cancer.

### Synthetic/Medicinal Chemistry Scientist

You will apply your skills in synthetic organic chemistry in the design and synthesis of novel therapeutic agents for various small molecule drug discovery programs. Position requirements include a PhD in Organic or Medicinal Chemistry with 2–4+ years of industrial experience. Additional experience in combinatorial chemistry and/or molecular modeling is highly desirable. Excellent communications skills and the desire to work in an interdisciplinary environment are required.

### Synthetic/Medicinal Chemistry Research Associate

Responsible for carrying out sophistical chemical transformations, with minimal supervision, in a highly interdisciplinary environment. Position requires a BS/MS in Chemistry with 1–3+ years of laboratory experience in organic synthesis. Experience in NMR spectroscopy and chromatography is highly desirable.

Our innovative research company offers a competitive salary, benefits, and stock incentive and stock purchase programs. Please send your resume to: Geron Corporation, Attn: Human Resources, 200 Constitution Dr., Menlo Park, CA 94025. EOE.



# THE UNIVERSITY OF CALGARY DEPARTMENT OF BIOLOGICAL SCIENCES SIX FACULTY POSITIONS

The Department of Biological Sciences of The University of Calgary invites applications for six tenure-track faculty positions at the Assistant Professor level (salary range: \$40,238 to \$57,266 per annum.) All positions are available July 1st, 1997. Position areas and codes are listed below. Potential applicants should contact the web site for full details: http://www.ucalgary.ca/-biology; if this is not possible please send a fax to 403-289-9311.

- Molecular Biology of the Lower Eukaryotes. Quote Code LE.
- Metabolic Biochemistry. Quote Code MB.
- Experimental Plant Morphogenesis/ Plant Development. Quote Code EPM.
- Community/Ecosystem Ecology. Quote Code CE.
- Population Ecology. Quote Code PE.

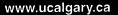
 Animal Physiology. Quote Code AP. The Department of Biological Sciences has approximately 45 faculty members, 950 undergraduate students, and 110 graduate students, and offers majors and honours programs in Biochemistry, Biological Sciences, Botany, Cellular, Molecular and Microbial Biology, Ecology and Zoology, and Masters and Doctoral programs in these areas. Excellent research facilities are available. In addition to extensive collaboration among laboratories throughout the Department, close associations exist with the Faculty of Medicine and the Kananaskis Field Stations (a short distance west of Calgary.) The University is a member of the consortium that owns and operates the Bamfield Marine Station on Vancouver Island. The required qualifications for all positions are a Ph.D. degree in an appropriate field, preferably at least two years of postdoctoral experience, a record of productive, high quality research, and a commitment to excellence in teaching at both undergraduate and graduate levels. All successful candidates will be expected to establish an active externally-funded research program. Candidates for positions LE, MB, and AP may be eligible to apply to the Alberta Heritage Foundation for Medical Research for establishment grants.

A complete application package should include: identification of the position of interest by reference to the appropriate position code, a curriculum vitae including an e-mail address, a concise outline of research directions and goals, copies of not more than three representative publications, and a statement of teaching interests and philosophy. Candidates should arrange to have three letters of reference sent to the address below. Applicants who wish to be considered for more than one position must send separate application packages (including reference letters.) The closing date for receipt of applications for all positions is November 15, 1996.

In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. The University of Calgary is committed to Employment Equity.

Application packages should be sent to: Dr. A. P. Russell, Head Department of Biological Sciences The University of Calgary 2500 University Drive N.W. Calgary, Alberta, CanadaT2N 1N4

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THE UNIVERSITY OF

CALGARY



n Corporation is a dyna xpanding company using genomics to disease-related genes and to new therapeutics. develop CuraGen's interdisciplinary research team includes expertise in genetics, biology, chemistry, engineering, microfabrication, physics, tation, mathematics, bioinformatics, and automation. Active collaborations with academic laboratories maine and ceutical companies complement our pharm internal resources and facilities. We seek utstanding creative and motivated individuals with the dedication and ambition to succeed in an entrepreneurial setting. Rewarding positions are available at all levels.

### VICE PRESIDENT, GENOMICS

Chart internal research initiatives; establish and drive external collaborations; and marshal resources company-wide for genomic assaults on disease. Required is the demonstrated ability to orchestrate a large-scale research program founded on genetics, positional cloning, expression analysis, and sequencing. These capabilities are supported by CuraGen's renowned automated genomics facility and augmented by comprehensive bioinformatics (GeneScape<sup>TM</sup>).

### DIRECTOR, INSTRUMENT DEVELOPMENT

Provide cohesive direction for an extraordinary team comprising engineers, computer scientists, chemists, and biologists, and dedicated to designing and building the finest DNA analysis tools available anywhere. Required are cross-disciplinary technical superiority and proven leadership in a research environment. These instruments are deployed at CuraGen's internal facility as well as at the Whitehead/MIT Genome Sequencing Center and promise to speed the completion of the Human Genome Project.

CuraGen's compensation package includes medical coverage and opportunities for equity participation. Active collaborations with Yale University (10 miles away), the Yale Comprehensive Cancer Center, the MIT/Whitehead Genome Center, and microfabrication centers at Berkeley and Cornell provide excellent opportunities for academic interactions and publications. CuraGen is a winner of two prestigious Advanced Technology Program awards from NIST and also receives funding from the National Institutes of Health, National Cancer Institute, and National Center for Human Genome Research.

To apply for a position at CuraGen, please send your resume and a statement of your career goals to us:

CuraGen Corporation Human Resources, Job Code VPS 322 E. Main St. Branford, CT 06405

or e-mail to jobs@curagen.com. Visit our homepage at http://www.curagen.com. CuraGen Corporation is an EEO/AA employer.

Doing tomorrow's research today.

# A Partnership Worth Discovering

**Cygnus** is a recognized leader in the discovery, development and manufacture of diagnostic and drug delivery systems. We recently entered into a marketing collaboration with Becton Dickinson for a non-invasive glucose monitoring device, now in development at our Redwood City, CA, headquarters. And our transdermal drug delivery systems are being designed to improve drug therapy and reduce health care costs. Our partnerships with J&J, Warner Lambert, Pharmacia and American Home Products require additional expertise and we invite talented professionals to discover the rewards of joining our dedicated team.

### Scientist Materials Development

Requires a BS or MS in Materials Science, Chemistry, Physical Chemistry, ME or CE with 10+ years' experience, or a PhD with 5+ years. A strong background in materials development and familiarity with polymer processing techniques such as coating, laminating, extruding, and casting required. Experience with adhesive and/or gel development is preferred.

### Staff Engineer Process Engineering

Supervising engineers and technicians in the performance of team tasks, you must possess a BS or MS in CE or ME with 5-10 years' experience. Expertise in mixing, coating, laminating, die-cutting, pouching, and drying is required along with knowledge of materials and handling chemicals. Ability to work with others on process scale-up and efficient planning of processes is required. Solid computer skills and the ability to perform cost analyses a must.

### Scientist Transdermal Development

Responsible for selecting certain coating and printing technology to fabricate transdermal products, you will work closely with transdermal and material scientists to understand formulations and material selection. PhD in CE or ME, Physics or Material Science is required, as is 15+ years' industrial experience with a focus on coating/ printing and processing technology. Analytical testing skills a must.

### Staff Scientist Analytical

You will develop, validate and carry out analytical methods for testing products (proteins, drug substances, impurities and degradants), in vivo samples, and components of product. Requires a BS in Chemistry or Biochemistry or related field with 10 years' experience in GLP or GMP analytical chemistry and 3-5 years' experience in GMP bio-analytical or protein chemistry. Ability to coordinate the operation and maintenance of bio-analytical instrumentation is required along with solid skills in protein chemistry, purification, and stability techniques. Industrial (GMP) pharmaceutical experience a must.

### Scientist Analytical

You will perform routine sample preparation, analysis, data reduction and reporting of results as well as execute the research and experimentation aspects of method development/method validation. BS in Chemistry or Biochemistry with 5+ years' experience in industrial analytical chemistry is required along with knowledge of GLP and cGMP practices and skill in the operation and maintenance of analytical instrumentation. Ability to perform tests in product release, recommend experimental protocols, and participate in chemical testing of drug substances, formulations and products is a must.

### Scientist Quality Control

You will perform routine and non-routine analysis of components, process samples and finished product using HPLC, GC, UV, and IR spectroscopy and other physico-chemical testing methods. You must possess knowledge of computer systems, chromatography software applications, Windows and spreadsheet packages. Ability to adhere to cGMPs in the performance of job function is required as is laboratory expreience and familiarity with GMP/Pharmaceutical requirements. BS in Chemistry is preferred.

Our San Francisco Bay Area location will situate you in the heart of California's bioscience community, which is also known for its natural beauty, Mediterranean climate, and many cultural and lifestyle amenities. Cygnus offers competitive salaries and benefits designed to provide for your present and future needs. Among them are a bonus plan, stock options, 3 weeks' vacation and a variety of health/dental plan choices. Please send your resume, indicating position of inter-

est, to: Cygnus, Inc., Human Resources, 400 Penobscot Drive, Redwood City, CA 94063, fax (415) 599-3938 or call our Job Hotline for more information on (415) 599-3577. EOE.





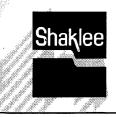
CYGNUS

# The Forefront of Drug Delivery

Shaklee Corporation recently announced plans to build a new research operation in Palo Alto's prestigious Stanford Research Park that will focus on the development of novel drug delivery systems. Serving as the base of Shaklee Pharma, the creation of this new facility has generated a unique opportunity for a select group of enthusiastic team players (Scientists, Chemists, Project Managers, etc.) who can actively contribute to our future success.

We're looking for driven, team-oriented R & D professionals with demonstrated knowledge & experience in one or more of the following disciplines: Product Development, Pre-Clinical Formulation, Analytical Chemistry, Microbiology, Quality Assurance, and Environmental Health & Safety. All positions require a "can do" attitude, excellent communication skills and a dedicated, yet flexible work ethic.

We will reward you with attractive salaries & benefits along with an excellent opportunity for career growth. For more information on specific job openings, please stop and see us at the **BioScience Career Fair** being held **October 4th & 5th** at Stanford University, or send/fax resume and cover letter to:



Shaklee Corporation Human Resources Dept. Attention: Job# SM09279-SP P.O. Box 3625 Haywad, CA 94540 Fax: (510) 887-5274

Equal Opportunity Employer

# MEDICAL DIRECTOR

••• At INHALE, we have developed the first commercially viable solution to a basic problem in biotherapeutics—the non-invasive delivery of a wide range of peptides, proteins, other macromolecules and small molecules for the treatment of respiratory disease and systemic applications. Our breakthroughs in pulmonary delivery systems are based on innovations in powder processing, protein formulations, and delivery systems devices. Come help advance our technology as a Medical Director.

We seek an experienced, team-oriented physician to manage and direct the company's rapidly growing clinical programs and advise on projects where clinical programs are directed by partners. We will expect you to integrate well with diverse project teams for delivery of completed NDAs, lead the execution and development of superior clinical strategies for a variety of therapeutic agents, and attract top clinical investigators, opinion leaders and study sites for our directed trials and assist in same for partner directed projects. You will also serve as Principal Investigator on sponsored trials, taking responsibility for protocol and statistical design, adverse event reporting, data collection, CRO selection and management, final clinical reports and FDA

Requirements include an MD degree, 5-10 years' industry experience and a recent track record of successful drug development. Current FDA experience is essential; pulmonary experience highly desirable.

Inhale offers excellent benefits and an informal, friendly work

environment. Salary, including stock options, commensurate with experience. Please fax/send resume and cover letter to: Inhale Therapeutic Systems, Human Resources, 1060 East Meadow Circle, Palo Alto, CA 94303. FAX (415) 354-0701. EOE.



### THE OHIO STATE UNIVERSITY DEAN OF THE COLLEGE OF ENGINEERING

The Ohio State University invites applications and nominations for the position of Dean of the College of Engineering, including the Austin E. Knowlton School of Architecture. The position will be available July 1, 1997.

The College of Engineering comprises a distinguished 250person faculty serving 5,000 undergraduates and 1,600 graduate students in 10 academic units. The Dean of Engineering oversees a total budget of \$86M, including one of the largest engineering research budgets among public institutions in the United States, and has the support of 35,000 College of Engineering alumni.

We are seeking a candidate with demonstrated leadership and vision to shape engineering education into the next century. The candidate should be a strong advocate for collaborative and broad-based engineering involvement with science and other disciplines, strongly committed to serving student needs, and a distinguished engineer or applied scientist with an international reputation in research and manifested expertise in organizational management, communication, and leadership. As a key member of the university leadership, the Dean is expected to contribute to the broad academic and cultural missions of the entire university.

The Search Committee will begin reviewing dossiers on December 1, 1996, and will continue to receive and review applications until the Dean is selected. Applicants should send a letter expressing their interest and qualifications, a curriculum vitae, and the names, addresses, and telephone numbers of three references to: **Prof. L.-S. Fan, Chair, Search Committee for the Dean of the College of Engineering, The Ohio State University, 140 W. 19th Avenue, Columbus, OH 43210.** 

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

### AMERICAN SOCIETY FOR MICROBIOLOGY AND NATIONAL CENTER FOR INFECTIOUS DISEASES 1997 POSTDOCTORAL RESEARCH ASSOCIATES PROGRAM

Up to eight associate positions will be awarded by the American Society for Microbiology for full-time research on infectious diseases which cause significant public health problems. Associates will perform research in residence at the National Center for Infectious Diseases (NCID) which is headquartered at the Centers for Disease Control and Prevention (CDC) in Atlanta, GA. In addition to Atlanta, NCID operates laboratories in Ft. Collins, CO, Anchorage, AK, and San Juan, Puerto Rico.

Eligible fields of study include:

ASM

CAN SOCIETY FOR MICROBIOLOGY

Bacterial and Mycotic Diseases Viral and Rickettsial Infections Nosocomial Infections HIV/AIDS Vector-borne Infectious Diseases Sexually Transmitted Diseases Parasitic Diseases

The associate positions are limited to individuals who either earned their doctorate degree (Ph.D., Sc.D., M.D., D.V.M., or D.D.S.) or have completed a primary residency after May 1994. Exceptions may be made for those with more experience. All qualified applicants are eligible to apply. While citizens of other countries who have a full command of the English language will be considered, preference will be given to qualified U.S. citizens and permanent residents. Qualified applicants will receive consideration without regard to race, creed, color, age, sex, or national origin. Diversity among associates is encouraged. The program provides an annual stipend of \$30,000 with a medical benefits package and up to \$4,000 for professional development.

The application deadline is December 1, 1996. The Postdoctoral Research Program is administered by the American Society for Microbiology. All inquiries regarding this program should be addressed to: ASM/NCID Postdoctoral Research Program, American Society for Microbiology; 1325 Massachusetts Avenue, N.W., Washington, D.C. 20005; Fax. (202) 942-9329; E-mail: TrainingInformation@asmusa.org. The Boolet and Application is available on ASM's home page at http/www.asmusa.org/edusrc/edu22e.htm.

> CDC/NCID CENTERS FOR DISEASE CONTROL AND PREVENTION/NATIONAL UNECTIVIE DISEASES CONTROL AND FOR

# NemaPharm

### "Worms in service to mankind"

Join a team of expert *C. elegans* researchers working to understand the basis of human disease, identify new drug targets, and discover drug candidates. Located in Cambridge, MA, NemaPharm, Inc., is a leader in the use of model organisms, especially the nematode *Caenorhabditis elegans*. As part of a major expansion of our efforts in functional genomics, we have a number of opportunities in the following areas:

### C. ELEGANS BIOLOGISTS

Research and develop state-of-the-art nematode based approaches to new treatments for human disease. Successful candidates will have a Ph.D. or equivalent and substantial experience in *C. elegans* genetics and biology. Senior scientists are encouraged to apply.

### MOLECULAR BIOLOGISTS

Sequencing of the genome of *C. elegans* is more advanced than that of any other animal. Successful candidates will use genomic sequence information in developing rapid methods for gene knockout, gene mapping and gene function analysis. Ph.D. and expertise with PCR and related techniques a must. Experience with high-throughput technologies a plus.

NemaPharm offers an excellent salary and benefits package, stock options and relocation assistance. Please mail or fax a letter of interest, your CV and names of three references to: Dr. Michael Basson, NemaPharm, Inc., 26 Landsdowne St., Cambridge, MA 02139. Fax: (617) 494-5101.

3-Dimensional Pharmaceuticals, Inc., a company integrating cutting-edge technologies in Structurebased Drug Design, Combinatorial Chemistry and Chemi-informatics to discover breakthrough pharmaceuticals, seeks individuals with outstanding qualifications in the following areas:

# ENZYMOLOGY

Positions are available to develop enzyme and protein binding assays. MS/BS level candidates with at least two (2) years work experience will be considered. Experience in bioassay development, enzyme kinetics and mechanism, or analytical biochemistry required. Preference will be given to candidates with experience in laboratory automation and high throughput screening.

3DP is located in Exton, Pennsylvania, and offers a comprehensive compensation and benefits package. Qualified individuals are invited to send a resume with contact data for three references to: **3-Dimensional Pharmaceuticals**, Inc., **Eagleview Corporate Center**, 665 Stockton Drive, Suite 104, Enzym.1001, Exton, PA 19341.



Cadus Pharmaceutical Corporation, a company pioneering the discovery of drugs which regulate G-protein mediated signaling pathways, is expanding its discovery programs based upon its unique proprietary screening technologies and has openings for motivated scientists in the following areas:

### Associate Research Scientists

### MOLECULAR BIOLOGY/ YEAST GENETICS

Candidates are sought for projects centered on the expression of mammalian signal transduction proteins in yeast. To qualify, you must have a BS/MS with 2-3 years experience in molecular biology or yeast genetics. **Code: S-CK** 

### **EXPRESSION CLONING**

Individuals in these positions will join expression cloning group involving the cloning of G protein-coupled receptor genes. Qualified candidates will possess a BS/MS with 2-3 years experience in molecular biology and gene cloning. Strong molecular biology skills and cell culture techniques are required. Experience in cDNA library construction and screening or experience in the Xenopus oocyte expression system is essential. **Code: S-PL** 

### **Ph.D.** Scientists

### **ORPHAN RECEPTOR PROGRAM**

We are seeking Ph.D. scientists with a minimum of 3 years postdoctoral research experience in molecular biology to take responsibility for projects centered on analysis of orphan G protein-coupled receptors using yeast-based or mammalian cell technologies. Expertise in DNA cloning and gene expression is essential. **Code: S-PCK** 

### MAMMALIAN CELL BIOLOGY

You will be a part of Cadus' Assay Development Group and take responsibility for projects involving the establishment of whole cell assay systems for G proteincoupled receptors. The ideal candidate for this position will have a Ph.D. and a minimum of 3 years postdoctoral research in mammalian cell biology and gene expression. Expertise with mammalian cell culture and gene expression is essential as are outstanding communication and management skills. **Code: S-JP** 

### MOLECULAR/YEAST BIOLOGY

This individual will take responsibility for projects centered on analysis of mammalian G-protein effectors using yeast-based technologies. To qualify, you must have a Ph.D. and a minimum of 3 years postdoctoral research experience in molecular biology. Experience in yeast genetics is essential. **Code: S-JM** 

Cadus offers competitive salaries and benefits as well as excellent opportunity for career growth in a stimulating collaborative environment. Send CV and List of References, indicating job code, to: Cadus Pharmaceutical Corporation, 777 Old Saw Mill River Road, Tarrytown, NY 10591-6705. Cadus is an Equal Opportunity Employer.





PHARMACEUTICAL CORPORATION

### POSITIONS OPEN

#### TENURE-TRACK ASSISTANT PROFESSOR IN DEVELOPMENTAL NEUROSCIENCE Department of Neurobiology and Anatomy University of Utah School of Medicine

The neuroscience community at the University of Utah has grown rapidly in recent years through the addition of new faculty and expansion of the interdepartmental graduate program. Developmental neuroscience on campus has been expanded by the addition of Drs. Kendal Broadie, Erik Jorgensen, Stanley Kater, Villu Maricq, Mark Noble, Margot Mayer-Proschl, Sheryl Scott, Mahendra Rao and Monica Vetter. The Department of Neurobiology and Anatomy now has an opening for one ASSISTANT PROFESSOR. Applicants must have a Ph.D., M.D., or equivalent degree and postdoctoral re-search experience. The ability to develop a very strong independent research program in nervous system development is of paramount importance. A strong commitment to teaching medical and graduate students is also required. Send a curriculum vitae, a statement of research interests, and names and addresses of three references to: Dr. T. N. Parks, Chair, Department of Neurobiology and Anatomy, University of Utah School of Medi-cine, Salt Lake City, UT 84132, U.S.A. Deadline is January 15, 1997, or until suitable candidates are identified. Equal Opportunity/Affirmative Action Employer. We strong-ly encourage applications from women and minorities. Visit our department at web site: www-na.med.utah.edu.

#### MICHIGAN STATE UNIVERSITY Michigan State University-Department of Energy Plant Research Laboratory Faculty Position in Plant Biology

The Michigan State University-Department of Energy (MSU-DOE) Plant Research Laboratory has a tenuretrack faculty position available at the **ASSISTANT PRO-FESSOR** level. Persons conducting innovative research in plant biochemistry are particularly encouraged to apply; however, outstanding candidates in other areas of plant biology will be seriously considered. Preference will be given to individuals working in underdeveloped areas that show promise for future advances.

The Plant Research Laboratory, with major funding from the U.S. Department of Energy, provides a stimulating atmosphere and excellent facilities for research in the plant sciences. Faculty members are jointly appointed in an appropriate academic department. Adequate laboratory space and set-up funds as well as continuing research support will be provided. Applicants should have postdoctoral research experi-

Applicants should have postdoctoral research experience with demonstrated productivity and evidence of potential for independent research. To ensure consideration, applications should be received by November 1, 1996. Applications, including curriculum vitae, description of research accomplishments and future interests, and three letters of reference, should be sent to: Kenneth Keegstra, Director, MSU-DOE Plant Research Laboratory, Michigan State University, East Lansing, MI 48824. MSU is an Equal Opportunity/Affirmative Action Employer. Women and minorities are particularly encouraged to apply.

#### TENURE-TRACK FACULTY POSITIONS NEUROSCIENCE Case Western Reserve University

The Department of Neurosciences at Case Western Reserve University School of Medicine invites applications for two tenure-track positions to be filled at the ASSISTANT PROFESSOR level. While outstanding candidates in any area of neuroscience will be considered, we are especially interested in areas that would complement existing strengths in developmental and molecular neuroscience; these include, but are not limited to, mechanisms of signal transduction: integrative neuroscience: and molecular mechanisms of synaptic plasticity, learning, and memory. Candidates will also be expected to participate in teaching medical and graduate students. The department is housed in newly renovated space and provides state-of-the-art facilities. Excellent opportunities exist for interaction with both the 12 primary faculty and with a number of neuroscientists from other departments that actively participate in research and teaching endeavors. Please submit a curriculum vitae and a summary of research interests by November 15, 1996, as well as arrange to have four letters of reference sent to: Dr. Lynn Landmesser, Search Committee, Department of Neurosciences, Case Western Reserve University Medical School, 10900 Euclid Avenue, Cleveland, OH 44106-4975. Case Western Reserve University is an Equal Opportunity/Affirmative Action Employer,

### POSITIONS OPEN



### ENVIRONMENTAL PHYSIOLOGIST University of Kentucky

The Organismal and Integrative Biology Section of the T. H. Morgan School of Biological Sciences invites applications for a TENURE-TRACK ASSISTANT PRO-FESSOR position to begin in the fall of 1997, subject to final budget approval. We seek an individual of exceptional promise engaged in research on how organisms, popu-lations, and/or communities respond to chemical or other environmental stresses. Specific areas of interest include, but are not limited to, reproductive biology, endocrinology, or immunobiology. Strong priority will be given to candidates working with macroinvertebrates, fish, or amphibians. Applicants should be able to develop an independent, nationally competitive research program and contribute to graduate and undergraduate education. Excellent start-up support, research space, facilities, and opportunities for multidisciplinary interactions are available. Applicants should submit a curriculum vitae and a summary of research plans and teaching interests, and should have letters sent by at least three references to: Environmental Physiology Search Committee, T. H. Morgan School of Biological Sciences, 101 Morgan Building, University of Kentucky, Lexington, KY 40506-0225. Review of applications will begin on November 22, 1996.

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

### TWO FACULTY POSITIONS MOLECULAR NEUROBIOLOGY

The Division of Biological Sciences at the University of Missouri–Columbia (MU) invites applications for two tenure-track faculty positions at the **ASSISTANT** or **AS**-SOCIATE PROFESSOR level. Preference will be given to candidates using molecular approaches and having research interests that complement those of current faculty in the Division of Biological Sciences, including neural plasticity, developmental neurobiology, ion channel function, and sensory transduction. MU has strong interdisciplinary programs in molecular biology and genetics, and the regulation of growth and development is a major research area in the Division. A highly competitive salary, excellent start-up package, modern research laboratories, and an active graduate program provide an extremely supportive environment. Assistant Professor candidates should have postdoctoral experience, and demonstrated potential for independent research. Associate Professor candidates must have an established nationally recognized research program. All candidates will be expected to participate in graduate and undergraduate teaching. For more information about the Division of Biological Sciences, consult http://www.missouri.edu/-bioscwww. For information about our Molecular Biology Program, consult http://www.missouri.edu/-molecwww. Send curriculum vitae, reprints of publications, statement of research and teaching interests, and letters from three references to:

#### Dr. John David 105 Tucker Hall University of Missouri–Columbia Columbia, MO 65211

Applications should be received by November 15, 1996 to receive full consideration. We are firmly committed to fostering ethnic and racial diversity on our faculty and strongly encourage applications from minorities and women.

### ASSISTANT PROFESSOR EPIDEMIOLOGY AND HEALTH PHYSICISTS

TENURE-TRACK position. Applicants must have a Ph.D., plus research experience in and high quality publications related to the health effects of ionizing radiation. Experience in RERF-related research a definite plus. On-the-ground experience in supervising field studies in the New Independent States, Ukraine, and Kazakstan preferred. Applicants should send a curriculum vitae and summary of current research and proposed activities, to-gether with three references, by November 7, 1996, to: Baylor College of Medicine, Director, Center for Cancer Control Research, One Baylor Plaza, ST 924, Houston, TX 77030.

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

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### POSITIONS OPEN

#### UNIVERSITY OF CALIFORNIA SANTA BARBARA Department of Molecular, Cellular & Developmental Biology Interdepartmental Graduate Program in Biochemistry/Molecular Biology

We invite applications for two tenure-track FACULTY **POSITIONS** in our expanding research programs in bio-chemistry, molecular, cellular and developmental biology; and molecular marine biology. Research expertise is sought in any of the following three areas: (1) protein receptors and signalling; (2) basic cellular/molecular biology or biomolecular materials research using marine model systems; and (3) prokaryotic molecular microbiology. One position is to be filled at the Assistant Professor level, while the other could be tenured, depending upon qualifications of the applicant. The Ph.D. degree plus relevant postdoctoral research experience are required. The appointees will be expected to lead vigorous independent research programs and to participate effectively in undergraduate and graduate teaching. Submit curriculum vitae, selected reprints, a brief description of previous and anticipated research, and arrange to have at least three letters of reference sent to: Faculty Search Committee, Department of Molecular, Cellular & Developmental Biology, University of California, Santa Barbara, CA 93106. Review of applications will begin December 1, 1996, and will continue until positions are filled. Email: http://lifesci.ucsb.edu/MCDB/mcdb\_home.html. University of California, Santa Barbara is an Equal Opportunity/ Affirmative Action Employer.

#### FACULTY POSITION VIROLOGY

The Department of Molecular Biology at the Univer-sity of Wyoming is seeking to fill a **TENURE-TRACK** position. Preference will be given to individuals with training and/or experience in the general area of mammalian virology. Candidates must hold a Ph.D. in an appropriate field and have at least two years of postdoctoral experience. Evidence of accomplishments in both research and teaching will be essential. The successful candidate will be expected to establish an independently funded research program and to participate in both the undergraduate and graduate teaching programs. The Dewith diverse research interests in biochemistry, genetics, and microbiology supported by over \$2.5 million per year in grants. Laboratory facilities are modern and wellequipped. Salary and start-up packages will be competi-tive. The University enrolls 12,000 students including about 3000 graduate students. Laramie is located in southeastern Wyoming about 120 miles from Denver, Colorado. For additional information about the Department, see http://www.uwyo.edu/ag/molecbio/ mobio.html or direct questions to uwmbio@plains. uwyo.edu. Candidates should submit a curriculum vitae, description of research plans and teaching philosophy, and three letters of recommendation to: Faculty Search Committee, Department of Molecular Biology, University of Wyoming, Laramie, WY 82071-3944. Screening of applications will begin on December 1, 1996 and continue until a suitable candidate is identified.

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

#### FACULTY POSITIONS: SPECIFIC AREAS OF BIOMEDICAL ENGINEERING Biomaterials and Biotechnology University of Michigan Ann Arbor, Michigan

Applications are solicited for **FACULTY** positions in the Department of Biomedical Engineering at all ranks. Qualifications include an outstanding academic record, significant publications in major peer-reviewed journals, a doctorate in biomedical engineering or some associated discipline, and a strong commitment to teaching and research.

Please send résumé and names of five references to: Professor John Faulkner Chair of Search Committee Department of Biomedical Engineering The University of Michigan 2350 Hayward 3304 G. G. Brown Ann Arbor, MI 48109-2125

An Equal Opportunity/Affirmative Action Employer.

# Ve'd like you to consider a career in general management consulting.

McKinsey & Company is a professional, international firm that advises senior management of the world's leading organizations on issues of strategy, organization, and operations. Our 3,500 consultants come from a variety of backgrounds — business, law, economics, science, and engineering —but share a common characteristic: all are distinctive in their fields and have the intellectual capabilities and personal qualities to provide outstanding service to our clients. As an associate at McKinsey, you will become a member of a consulting team (typically 3 to 6 people) and take an active role in all aspects of problem solving. This entails defining the problem, structuring an approach, gathering information, analyzing and synthesizing findings, developing and communicating recommendations, and designing change programs.

In addition to on-the-job learning, McKinsey provides an extensive formal development program—covering subjects from basic consulting skills to leadership—that continues throughout a consultant's career. An individual's development is further enhanced by participating in management research projects and publishing the results, serving as faculty at training programs, and transferring to other McKinsey offices on either a short-or-long-term basis. If you are interested in working side-by-side with the senior managers of important organizations, growing professionally in a stimulating and supportive environment, taking risks and being challenged, and shaping your own career, we would like to talk to you about a career with us.

- ■If interested primarily in a McKinsey office in the U.S. or Canada, submit your resume to: KATHERINE PADGETT
- If interested primarily in a McKinsey office in Africa, Asia, Australia, Europe or Latin America, send your resume to: ELLEN HOLLAND

MCKINSEY & COMPANY, INC. 55 EAST 52ND STREET, NEW YORK, NY 10022 AN EQUAL OPPORTUNITY EMPLOYER



Interested candidates should hold, or be completing, a graduate degree in science or engineering and have up to 5 years work experience. Candidates should have an outstanding record of academic achievement, strong analytic and quantitative skills, demonstrated leadership, excellent communication skills, and comfort in a team environment. A motivation to learn and to have impact in solving difficult, practical problems is essential.

# McKinsey & Company, Inc.

### **RIGEL PHARMACEUTICALS**

Rigel Pharmaceuticals is a newly established drug discovery biotechnology company situated in the San Francisco Bay Area. Rigel is using revolutionary gene transfer technologies to identify and validate novel drug targets and discover small molecule therapeutics.

We are assembling an integrated and dynamic team of highly motivated and experienced scientists to build an exciting company focusing in cancer, inflammation, and infectious diseases.

We offer competitive salaries, full benefits, equity participation, and career advancement opportunities. The following positions are open:

- 1. Cellular Biology: We are seeking an experienced scientist to establish a cell biology group. You will be responsible for the development of state-of-the-art cellular assays that can be used in HTS systems. You will work closely with virologists, molecular biologists, and chemists. Candidates must possess both an M.D. and Ph.D., have significant biotech industry experience, and have 2-3 years of postdoctoral training. Additional background in chemistry a plus. Job #501-DCB.
- 2. Protein Science: We are seeking an experienced scientist to establish a protein science group. You will develop state-of-the-art technologies to analyze all aspects of protein-protein and small molecule-protein interactions. You will also establish state-of-theart bioanalytical methodologies to analyze chemical libraries. Candidates must possess a Ph.D. with significant experience in the biotechnology industry and a strong publication record. Experience in structural and computational chemistry a plus. Job #501-DPC.
- 3. Virology-Molecular Biology: We are seeking a talented scientist with broad experience in cellular and molecular biology, and extensive experience in all aspects of virology and gene-transfer technologies. You will be responsible for advancing Rigel's stateof-the-art proprietary technologies in this area working closely with the company's scientific founders. Candidates must possess a Ph.D. with outstanding publication record, and have spent 2-3 years as a postdoc in a leading lab, in addition to having significant industry experience. Backgrounds in enzymology/chemistry and genetic engineering a plus. Job #501-SSV.
- 4. Research Associates: All positions require BS/MS and 3-4 years of experience in the biotechnology industry. Job #501-RA a-e.
  - a. Virology: Experience in all aspects of virology research, molecular biology, and tissue culture.
  - b. Cellular Biology: Experience in setting up assays for HTS and cell-based fluorescent assays.
  - c. Molecular Biology: In-depth knowledge of cDNA and genomic library construction/analysis.
  - d. Protein Chemistry: Familiarity with all aspects of protein analysis and purification. Experience with microchemistry and MS analysis of small molecule libraries.
  - e. Tissue Culture: All aspects of tissue culture with experience in monoclonal antibody cell lines and FACS analysis.

Please send cover letter (attention Job #) and resume to: SCIENCE, Box #70, 1200 New York Avenue, NW, Washington, DC 20005.

### POSITIONS OPEN

### NEUROPHARMACOLOGIST Kansas State University

The Department of Anatomy and Physiology, College of Veterinary Medicine, invites applications for a tenuretrack faculty position, at the ASSISTANT PROFES-SOR level (80% research, 20% teaching). Candidates should hold a Ph.D. in pharmacology or a related discipline and have at least two years of postdoctoral research training. Preference will be given to applicants with research experience in neuroscience and interests that complement existing programs in the department. The successful candidate will have an extramurally funded research program or an established research program with considerable potential for securing extramural funding. The appointee will be expected to develop a graduatelevel course related to his or her research interests, and to contribute to a team-taught pharmacology course for veterinary students. The position is available August 1, 1997. D.V.M. and/or Ph.D. required.

Applications should include a curriculum vitae, a statement of research and teaching interests, names and addresses of three references, and reprints of three representative publications. Applications will be received until November 15, 1996 or until the position is filled. Send applications to: Dr. Jon D. Dunn, Department Head, Department of Anatomy and Physiology, VMS 228, Kansas State University, 1600 Denison Avenue, Manhattan, KS 66506. Kansas State University is an Equal Opportunity/Affirmative Action Employer.

#### FACULTY POSITION—BIOCHEMIST

The Departments of Chemistry and Biology of the University of St. Thomas invite applications for a full-time position in biochemistry. It is anticipated that the appointment will be tenure-track with final administrative approval expected in October 1996. The appointment will be made at the ASSISTANT PROFESSOR level and the salary will be commensurate with the successful candidate's experience. The starting date is September 1, 1997. Immediate responsibilities will include teaching both semesters of biochemistry lectures and labs. It is essential that the successful candidate have a strong background in organic chemistry. Preference will be given to candidates who additionally have a significant background in biology. Establishment of a vigorous research program accessible to undergraduate chemistry and biology majors is expected and therefore postdoctoral research experience will also be considered a plus. A Ph.D. in biochemistry is required as well as a strong commitment to teaching at the undergraduate level in a liberal arts context. St. Thomas is a coeducational, Catholic university dedicated to the total development of the individual student. Send letter of application; curriculum vitae; statements of teaching philosophy and research plans appropriate for undergraduates; and graduate and under-graduate transcripts, plus arrange to have three letters of reference sent directly to: **Dr. Brad Glorvigen, Chair,** Department of Chemistry, Mail Number 5032, University of St. Thomas, 2115 Summit Avenue, St. Paul, MN 55105-1096. All materials, including letters of reference, must be received by October 28, 1996. The University of St. Thomas is an Equal Opportunity/Affirmative Action Employer.

#### EVOLUTIONARY PLANT BIOLOGY

The Department of Environmental and Plant Biology at Ohio University invites applicants with research interest in Evolutionary Plant Biology to apply for a tenure-track position at the **ASSISTANT PROFESSOR** level. Candidates are expected to have completed the Ph.D. degree, to develop an active research program, and to secure external funding and attract doctoral students. The successful candidate will teach upper-division undergraduate/graduate courses in evolutionary plant biology; participate in introductory courses for majors or nonmajors; and provide research opportunities for doctoral, Master's, and undergraduate students. Candidates should be engaged in an experimental program to explore processes of evolution and be willing to engage in interdisciplinary activities.

Applicants should send by November 8, 1996 their curriculum vitae, a statement of research interests, reprints of publications, and three letters of recommendation to: Chair of the Search Committee, Department of Environmental and Plant Biology, Porter Hall 317, Ohio University, Athens, OH 45701-2979. Ohio University is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply. POSITIONS OPEN



#### EVOLUTIONARY BIOLOGIST

The Department of Biology at Swarthmore College invites applications for a tenure-track appointment at the ASSISTANT PROFESSOR level, to begin September 1997. We seek an evolutionary biologist who is committed to combining teaching and research at a small liberal arts college. Teaching responsibilities include a broadly based intermediate-level course in evolution, an advanced seminar in a major area within evolutionary biology, and participation in the Department's introductory biology sequence. The successful candidate will be expected to establish an active research program that will provide opportu-nities for undergraduate participation. A Ph.D. is required; postdoctoral research experience and teaching experience are desirable. Interested individuals should submit a curric ulum vitae along with statements of teaching and research interests, and arrange to have three letters of recommen-dation sent by October 15, 1996, to: Dr. Rachel Merz, Department of Biology, Swarthmore College, Swarthmore, PA 19081-139

Swarthmore College is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.

### TWO ASSISTANT PROFESSOR POSITIONS

The University of Mississippi Department of Biology invites applications for two Assistant Professor positions (**TENURE-TRACK**) to begin August 1997. One position will be filled by a microbiologist with research interests in environmental microbiology/microbial ecology. The successful candidate will have a strong background in microbiology and be capable of effectively teaching a variety of undergraduate and graduate microbiology courses. The second position will be filled with a vertebrate ecological physiologist. The successful candidate will have a strong background in physiology with research experience related to the evolution and ecology of basic physiological mechanisms at the callular or whole-animal level. The physiologist must be capable of effectively teaching graduate-level courses in the area of specialty and general physiology to upper-division undergraduates, primarily pre-medical students. The development of an extramurally funded research program involving doctoral students is expected for both positions.

Candidates should send 1) curriculum vitae, 2) up to five reprints of recent publications, 3) statement of research and teaching interests and philosophy, 4) evidence of teaching experience and ability, and 5) names and addresses of three references before 18 October 1996 to:

Dr. Al Mikell (Microbiology Search) Email: bymikell@sunset.backbone.olemiss.edu or

Dr. Rebecca Holberton (Physiology Search) Email: byrlh@sunset.backbone.olemiss.edu Department of Biology University of Mississippi

University, MS 38677 http://www.olemiss.edu Telephone: 601-232-7204

The University of Mississippi is an Affirmative Action/Americans with Disabilities Act/Equal Opportunity Employer.

#### MICROBIOLOGY ASSISTANT PROFESSOR

Florida International University (FIU), the State University of Florida at Miami, seeks to fill a **TENURE TRACK** position in Microbiology to start August 1997. We are especially interested in candidates with expertise in environmental microbiology or microbial diversity. The successful candidate will teach undergraduate General Microbiology, as well as undergraduate and graduate courses in his or her specialty, and will establish a successful research program. More detailed information about the position can be found at http://www.flu.edu/~biology/micro.html. Ph.D. required; postdoctoral experience preferred. To apply, send curriculum vitae, statements of research and teaching goals, and three letters of reference by October 24, 1996 to: David Kuhn, Chair, Microbiology Search and Screen Committee, Department of Biological Sciences, Florida International University, Miami, FL 33199. FIU is an Equal Access/ Affirmative Action/Equal Opportunity Employer and a member of the State University System of Florida.

### POSITIONS OPEN

#### DEVELOPMENTAL BIOLOGIST

Baylor University, a private liberal arts university of 12,000 students, seeks a developmental biologist for a tenure-track position at the **ASSISTANT PROFES-SOR** level beginning 1 July 1997. Applicants must have a Ph.D. degree, with postdoctoral experience preferred, and be using current and innovative approaches to solve various questions concerning developmental processes. Position responsibilities: teach courses in embryology/ development, in area of specialty, and in the introductory biology sequence; establish a research program that provides strong training and opportunities for undergraduate and graduate students; and participate in departmental and university service activities. Baylor is renowned for excellence in teaching, balanced with quality faculty and student research. Submit, by 15 November 1996, application letter, curriculum vitae, three letters of recommendation, graduate and undergraduate transcripts, state-ments of teaching philosophy and research interests, and copies of recent publications to: Prof. Ken Wilkins, Search Committee Chair, Department of Biology, Baylor University, Waco, TX 76798-7388. Tele-phone: 817-755-2911; FAX: 817-755-2969; Email: ken\_wilkins@baylor.edu; World Wide Web: http:// www/baylor.cdu. Baylor University is a Baptist university affiliated with the Baptist General Convention of Texas. As an Äffirmative Action/Equal Employment Opportunity Employer, Baylor encourages minorities, women, veterans, and persons with disabilities to apply.

### ANIMAL PHYSIOLOGY ANIMAL POPULATION ECOLOGY

The Department of Biology at Virginia Commonwealth University (VCU) invites applications for two tenure-track positions. 1) Animal Physiology—Seeking an individual whose research focuses on cellular or molecular mechanisms of animal physiology. Teaching responsibilities include vertebrate physiology for undergraduate majors and pre-health-science students and a graduate course in a specialty area. 2) Ecology—Seeking an individual whose research focuses on an area of population ccology, with an emphasis on animal populations. Teaching responsibilities may include introductory biology, ecology, evolution, and a graduate course in a specialty area.

Both positions will be filled at the ASSISTANT PROFESSOR level, although more senior individuals with established research programs will be considered. The successful candidates will be expected to develop an externally funded research program and to direct graduate students at the M.S. level. Postdoctoral experience preferred.

Virginia Commonwealth University has an enrollment of over '21,000 students and 800 biology majors. The Biology Department has 26 faculty members with diverse research interests. Potential exists for interaction with faculty at VCU's Medical College of Virginia. Submit curriculum vitae, statement of research interests, and names of three references by December 9, 1996 to: **Dr. Jennifer Stewart (Physiology) or Dr. Donald Young (Ecology), Department of Biology, Virginia Commonwealth University, Richmond, VA 23284-2012. Virginia Commonwealth University is an Equal Opportunity/Affirmative Action Institution. Women, minorities, and persons with disabilities are encouraged to apply.** 

### PLANT ECOLOGIST

ASSISTANT PROFESSOR, tenure-track, for an ecologist with a research program focusing on plants or plant-animal interactions, beginning July 1, 1997. The candidate is expected to establish an active research projects, and participate in an introductory course with laboratory entitled "Adaptation and the Organism," an upper-level course in ecology, and an advanced course or seminar in the candidate's area of expertise. Ph.D. required and post-doctoral experience preferable.

Send curriculum vitae, statement of research and teaching interests, and three letters of evaluation by December 1, 1996 to: Patrick Williamson, Chair, Department of Biology, Amherst College, Amherst, MA 01002-5000.

Amherst College, a private cocducational liberal arts college of some 1570 students and 165 faculty located in the Connecticut River Valley of western Massachusetts, participates with Hampshire, Mount Holyoke, and Smith Colleges and the University of Massachusetts in the Five-College Consortium. Antherst College is an Affinnative Action/Equal Opportunity Employer, and encourages women, minorities, and disabled persons to apply.

### **RESEARCH MICROBIOLOGIST**

(DNA REPAIR)

The National Institutes of Health, Clinical Center, in Bethesda, MD, is seeking a full-time employee to perform research in the use of radiolabeled nucleic acid probes for *in vivo* applications in cancer treatment and detection.

This position is located in the nuclear medicine department, which has an active program in radiopharmaceutical development, radiopharmacy, imaging physics, modeling and data analysis sciences. Resources available include: two medical cyclotrons, six radiochemistry hot cells and four chemistry laboratories, three molecular biology laboratories, computer hardware/software for the generation and analysis of physiological images and conventional and spect nuclear medicine instruments.

Applicants must possess a Ph.D. in a relevant field and at least one year of additional professional experience with nucleic acid repair mechanisms related to modifications of RNA and DNA by radiation damage.

This appointment is for three years. A GS-13 annual salary range of \$52,867—\$68,729 is available, commensurate with qualifications. A full federal benefits package is included. U.S. citizenship is required.

For information regarding technical aspects of the position, contact:

Igor Panyutin, Ph.D. National Institutes of Health CC/NMD Bldg. 10, Room 1C401 10 Center Drive, MSC 1108 Bethesda, MD 20892-1108 301-496-4386

To obtain application materials, contact: Pamela Stevenson National Institutes of Health CC/OHRM/POS Bidg. 10, Room 1N312 10 Center Drive, MSC 1200 Bethesda, MD 20892-1200 301-496-6924

NIH is an Equal Opportunity Employer

## NATIONAL INSTITUTE ON ALCOHOL ABUSE AND ALCOHOLISM

The Laboratory of Membrane Biochemistry and Biophysics, NIH, is seeking a biochemist/ cell biologist to study lipid metabolism in the nervous system. The successful candidate will be appointed to a position within the Intramural Research Training Award (IRTA) program with a salary ranging from \$25,000 to \$42,000, depending upon years of experience. Candidates should have fewer than five years of relevant postdoctoral experience. Relevant experience in cell culture, biochemical assays, immunoblotting, chromotography, and subcellular fractionation is desirable. Candidates who wish to apply should send a C.V., bibliography, and three letters of recommendation to Kathleen Hanratty, Personnel Office, Building 31, Room 1B58, 31 Center Drive MSC 2088, Bethesda, MD 20892-2088. Applications must be postmarked by October 31, 1996.

The mission of Human Genome Sciences is to identify and develop drugs and diagnostic products based on its leadership position in the discovery and expression of novel genes from human, animal, plant, and microbial origin.

## PHARMACOLOGIST

A scientist position is available in our Pharmacology Department for Ph.D./M.D. applicants with at least 5 years of laboratory experience in Pharmacology research. The candidate should have expertise in receptor binding assays, second messenger delineation and small animal models of disease. Isolated organ bath experience is desirable, but not necessary. (Position: #MA 9/27)

## PROTEIN EXPRESSION FORMULATIONS SCIENTIST

We have an immediate opening for a scientist in our Protein Therapeutics group. Qualified candidates will possess a Ph.D. in Pharmaceutical Sciences, Biochemistry or related discipline plus 5 years of experience, or a B.S./M.S. degree with a minimum of 5-8 years of industry experience in pharmaceutical product development. Responsibilities include design and execution of pre-formulation and formulation studies of proteins. This position requires a "hands-on" approach in the development and evaluation of formulation, processes and equipment. Applicants should have experience with GMPs. (**Position: #RG 9/27**)

## **BIOINFORMATICS SCIENTISTS**

Our Bioinformatics Department is seeking highly motivated and creative scientists to design and develop sequence analysis tools for gene discovery. Successful candidates will have a Ph.D. in Computational Biology, Biophysics, Bioinformatics or related discipline and 2 or more years of postdoctoral experience. Candidates must have a thorough knowledge of sequence similarity software and motif analysis. Proficiency using large sequence database and programming expertise on UNIX machines are required. Experience in molecular modeling, protein folding and data visualization techniques is highly desirable. (**Position #MF 9/27**)

## **MOLECULAR MICROBIOLOGY**

We are seeking creative Ph.D./M.D. candidates willing to exploit complete microbial genome sequence information toward the identification of new vaccine antigen candidates and development of gene-based antimicrobial agents. Knowledge of microbial genetics and animal models of infectious disease is essential. (Position #PD 9/27)

HGS encourages the pursuit of academic excellence and offers a competitive benefits package including educational reimbursement, subsidized health club membership, 401(k) plan with employer match, and more. Look for us at careers.hgsi.com or send/fax your resume to **Human Resources Department**, **Human** 



Genome Sciences, Position #\_\_\_\_, 9410 Key West Avenue, Rockville, MD 20850. FAX: (301) 309-1845. We are an equal opportunity

employer.



### TENURE-TRACK POSITION EUKARYOTIC VIROLOGY

The Department of Microbiology and Molecular Genetics, Oklahoma State University, is reopening the search for a tenure-track faculty position at the ASSIS-TANT PROFESSOR level to begin January 1, 1997. Appointment is for nine months with a nationally competitive salary and start-up funds. The successful candidate would be expected to supervise M.S. and Ph.D. students and establish a strong research program support ed by extramural grants in any area of biological significance to the study of the basic biology of eukaryotic virus. Teaching responsibilities may include courses in cell and molecular biology, virology, and a graduate course in the applicant's specialty. A Ph.D. degree, significant postdoctoral experience, and demonstrated expertise in the field are required. The department has an active graduate and undergraduate program with over 25 graduate students (primarily Ph.D. candidates) and over 150 undergraduate majors. Stillwater is a university town of about 40,000 located about 60 miles equidistant from the metropolitan centers of Oklahoma City and Tulsa. Interested applicants should submit a detailed curriculum vitae, a short statement of research interests, relevant reprints, and names and addresses of at least three references to: Dr. James Blankemeyer, Virology Search Coordinator, Department of Microbiology and Molecular Genetics, 306 LSE, Oklahoma State University, Stillwater, OK 74078-3020. Telephone: 405-744-6243; FAX: 405-744-6790. Review of applications will begin on October 22, 1996 and will continue until the position is filled. Oklahoma State University is an Affirmative Action/Equal Op-portunity Employer. Applications from women and minorities are particularly welcome.

#### ASSISTANT PROFESSORS MOLECULAR BIOLOGY AND BIOTECHNOLOGY

The Division of Biology of Kansas State University (KSU) invites applications for two TENURE-TRACK positions at the Assistant Professor level, beginning in the 1997/98 academic year. We seek individuals who will establish strong, extramurally funded research programs in molecular biology and biotechnology, as well as participate in undergraduate and graduate teaching. A Ph.D. or equivalent and postdoctoral training are required. The positions include competitive salaries and start-up packages. One individual will focus on animal cell systems, particularly virology and cell biology, and teach virology. The second will utilize genetic, cellular, and developmental approaches to plant biology, and teach in molecular biology courses. The Division of Biology is a large, diverse unit, with a strong record of research productivity and funding and established investigators in areas relevant to the search. For more information go to http://www.ksu.edu/biology. Applicants should submit a curriculum vitae, selected reprints, and a summary of research interests, and should have three letters of reference sent to: Rob Denell, Chair, Faculty Search Committee, Division of Biology, Kansas State University, Ackert Hall, Manhattan, KS 66506-4901. Applications should be received by November 1, 1996. KSU is an Equal Opportunity/ Affirmative Action Employer and encourages diversity among its employees.

ASSISTANT PROFESSOR-Reproductive Biology of Horticultural Crops, tenure-track, research, and teach ing. Department of Horticulture, Purdue University. The successful candidate will be expected to develop a nationally recognized research program supported by extramural funds and utilizing the tools of molecular genetics, biochemistry and/or cellular biology to address problems related to the reproductive biology of horticultural crops. The incumbent will teach an undergraduate course and a section of a graduate course in Plant Growth and Development that emphasizes reproductive development. A Ph.D. in horticulture, plant biology, or a related discipline is required, and postdoctoral research experience is desirable. Screening of applicants will begin October 31, 1996. Applicants should submit curriculum vitae, transcripts, statement of research and teaching interests and goals, copies of representative publications (up to five), and three letters of reference to: Dr. Robert J. Joly, Search Committee Chair, Department of Horticul-ture, Purdue University, 1165 Horticulture Build-ing, West Lafayette, IN 47907-1165.

Purdue University is an Equal Opportunity/Affirmative Action Employer.

### POSITIONS OPEN

### ANATOMY/PHYSIOLOGY The Ohio State University at Mansfield

The Department of Zoology is seeking a candidate for a tenure-track **ASSISTANT PROFESSORSHIP** on the Mansfield Campus of The Ohio State University. Duties include teaching undergraduate courses in 1) human anatomy, 2) physiology, and 3) introductory biology, and establishing and maintaining an active research program. Specialization is open, but some preference will be given to applicants in vertebrate ecology/evolutionary biology whose research program can be carried out in a regional campus setting possessing limited laboratory facilities. Applicants should have a Ph.D., a strong commitment to undergraduate teaching, and an active research program. The appointment will begin autumn 1997. The successful candidate will join a Mansfield Campus biology faculty composed of an ichthyologist, a microbial evolutionary ecologist, and a botanist, and will be a non-salaried member of The Ohio State University's Department of Zool-ogy on the Columbus Campus. The Mansfield Campus of The Ohio State University enrolls 1500 students and offers the first two years of The Ohio State University's curriculum, as well as Baccalaureate and Master's degrees in a few majors. Graduate faculty members may direct graduate students through the department on the Co-lumbus Campus. For full consideration, send curriculum vitae, reprints, three letters of reference, and a brief description of teaching and research goals by November 15, 1996 to: Dr. David Nickey, Chair, Zoology Search Committee, The Ohio State University at Mansfield, 1680 University Drive, Mansfield, OH 44906-1599

The Ohio State University is an Equal Opportunity/Affirmative Action Employer. Women, minorities, Vietnam-era veterans, disabled veterans, and individuals with disabilities are encouraged to apply.

The Neuroscience Research Institute (NRI) and the University of Ottawa seek applications from basic neuroscience researchers for **TENURE-TRACK-EQUIVA-LENT** appointments. The successful applicants will possess a strong background in molecular neurosciences. They will have demonstrated an independent research program applied to clinically relevant research areas broadly relating to stroke, neurodegenerative diseases, or mental illnesses. Areas of particular research interest would include: neurotrophins and neuronal survival, receptor-mediated signal transduction mechanisms, regulation of apoptosis/proliferation and cell migration/differentiation in brain, transgenic approaches to understanding brain function, and regulation of gene transcription in the brain.

A generous start-up package will be made available to the successful applicant. The NRI is a recently established institute focusing on developing innovative approaches to address aspects of neuronal function. It is located on a thriving campus that includes basic medical science departments, the Children's Hospital of Eastern Ontario (CHEO) Research Institute, the newly established Ottawa General Hospital Research Institute, the Cancer Research Centre, and two tertiary care hospitals.

Please send curriculum vitae and a description of current and future research plans to:

### Dr. A. M. Hakim Director, Neuroscience Research Institute 451 Smyth Road Ottawa, Ontario K1H 8M5 Canada

According to Canadian Immigration requirements, this ad is primarily addressed to Canadian citizens and landed residents of Canada.

Applications will be received until December 31, 1996.

FACULTY POSITION, Brown University. The Department of Chemistry invites applications for a threeyear renewable, tenure-track position in physical chemistry at the assistant professor level. Research topics in all areas of experimental physical chemistry will be considered. The successful candidate is expected to have a Ph.D., to maintain a vigorous research program, and to excel in teaching at both the undergraduate and graduate level. Applicants should submit a complete curriculum vitae, graduate and undergraduate transcripts, a detailed statement of research plans, and three letters of recommendation. All materials should be sent to: Professor P. M. Weber, Search Committee, Department of Chemistry, Brown University, Providence, RI 02912. In order to receive full consideration, applications should be filed by November 15, 1996. Brown University is an Equal Opportunity/Affirmative Action Employer.

### POSITIONS OPEN

#### ASSISTANT/ASSOCIATE PROFESSOR ANIMAL BEHAVIOR University of Minnesota Twin Cities

The Department of Ecology, Evolution and Behavior, University of Minnesota, Twin Cities, invites applications for a **TENURE-TRACK/TENURED** position in Animal Behavior at the level of Assistant or Associate Professor. This will be one of several hires to be made in this area in the next few years. We seek someone who takes a strongly evolutionary approach with active research interests in behavioral mechanisms, including but not limited to endocrine, sensory, or cognitive mechanisms. The successful candidate will complement an active group of faculty and students in behavioral ecology, and will have the opportunity for interdisciplinary contacts with other departments. For more information about the department and interdisciplinary graduate programs, see http: //biosci.cbs.um..edu/eeb/jobs/.

The candidate will be expected to develop a successful research program and to teach undergraduate and graduate courses in behavior. A Ph.D. in behavior or a related biological discipline is required, and postdoctoral experience is highly desirable. Send curriculum vitae, statements of research and teaching interests, copies of up to three reprints, and letters of reference to: Behavioral Search Committee Chair, EEB, 1987 Upper Buford Circle, University of Minnesota, St. Paul, MN 55108. Application review will begin on December 1, 1996; closing date is January 22, 1997.

The University of Minnesota is an Equal Opportunity Educator and Employer.

### DEVELOPMENTAL BIOLOGIST Lafayette College Available August 1997

Tenure-track ASSISTANT PROFESSOR. Candidates must have a Ph.D. degree plus postdoctoral training and research in molecular techniques, particularly in developmental neurobiology and/or pattern formation of invertebrates or lower vertebrates. We seek a broadly trained biologist committed to excellence in teaching and research within the context of a selective, undergraduate, liberal arts institution. Teaching load 2/2 plus honors and independent study students. Courses include developmental biology, neurobiology, a senior seminar in the applicant's research area, and teaching in the introductory biology course sequence. The successful applicant will be expected to maintain a vigorous research program involving undergraduates. Expanded position description available at http://www.lafayette.edu/biology/biohome. html. Competitive salary, benefits, and start-up funds. Applicants should submit curriculum vitae, undergraduate and graduate transcripts, and a two-page description of teaching philosophy and research plans with undergraduates, and should arrange for three letters of recommendation, to be sent by November 15, 1996 to: Dr. Shyamal K. Majumdar, Head, Department of Biolo-gy, Lafayette College, Easton, PA 18042-1778. Lafayette College is an Equal Opportunity Employer. Women and minorities are encouraged to apply.

### ACADEMIC SCIENTIST

The Divisions of Perinatology and Neonatology at The Evanston Hospital Corporation, Northwestern University Medical School, are seeking a scientist at the **TEN-URE-TRACK** level to join the Perinatology Research Group. Candidates should have a Ph.D. in molecular biology or biochemistry and have experience and interest in inflammation and mediator biology. Salary is commensurate with background and experience. Send curriculum vitae to: Michael Caplan, M.D., Head, Division of Neonatology, Department of Pediatrics, Evanston Hospital, 2650 Ridge Avenue, Evanston, IL 60201. Evanston Hospital is an Affirmative Action/Equal Opportunity Employer.

The Smith College Department of Biological Sciences is seeking a full-time, tenure track ASSISTANT PRO-FESSOR in Bacterial Physiology/Immunology starting September 1, 1997. Candidates should have a Ph.D., a commitment to teaching and a strong research program. Preference given to persons with significant teaching and/or postdoctoral experience. Send a curriculum vitae, statement of teaching philosophy and research interests, and three recommendations to: Prof. S. A. Williams, Department of Biological Sciences, Smith College, Northampton, MA 01063 by November 15, 1996.

## THE J. DAVID GLADSTONE INSTITUTES

University of California, San Francisco San Francisco General Hospital

## **POSTDOCTORAL RESEARCH OPPORTUNITIES**

### Gladstone Institute of Cardiovascular Disease

Availble January 1, 1997, in the laboratory of **Dr. Robert Farese**. Study *in vivo* cholesterol esterification and cellular cholesterol metabolism using a molecular genetic approach. Methodology includes gene manipulation in mice and cell biology of sterol metabolism. Ph.D. or M.D./Ph.D. with experience in molecular/cellular biology required. Job # C96-028.

### Gladstone Institute of Cardiovascular Disease

Available immediately in the laboratory of **Dr. Israel Charo**. Study the molecular biology of Chemokine Receptors. Methodology includes transgenic and knockout models. Molecular mechanisms of chemotaxis and roles as Co-Receptors for internalization of HIV-1. A strong background in molecular/ cellular biology is required. Job #C95-063.

### Gladstone Molecular Neurobiology Program

In the laboratory of Dr. Lennart Mucke. Investigate the molecular basis of dementing illnesses such as Alzheimer's disease and AIDS dementia complex. Studies of neural explant cultures, transgenic animal models and human tissues will be combined to define the neuropathogenetic roles of viral or host-derived proteins and to identify critical targets for therapeutic interventions. A strong background in molecular biology or neurobiology is required. Job #C96-022.

Interested candidates, please send C.V. and a list of references to: Job #\_\_\_\_\_, The Gladstone Institutes, P.O. Box 419100, San Francisco, CA 94141. Fax (415) 826-3708.

For more information about the Gladstone Institutes, please visit our website: http://gladstone.ucsf.edu

Equal Opportunity/Affirmative Action Employer

## PRESIDENT

Pharmaceutical/Biotech Start-up

We are a privately-held, financially sound company that applies customized commercialization approaches to advanced medical technologies.

We seek a President for our dynamic, high-potential new division, founded on existing innovative proprietary technology. You will report to a Group Director within the corporate division and have full authority for hiring, staffing, and entering into vendor and other support agreements.

If you are the seasoned manager we seek, your education includes a technical undergraduate degree with an MBA. You have managed a successful P&L within the pharmaceutical/ biotech industry (vaccine products a plus) with accountability for R&D, clinical trials, manufacturing, and marketing. Your career gives evidence of your talent for identifying and negotiating strategic alliances as a major path to business growth and funding, and you have a clear understanding of the challenges of the commercialization process. Excellent people skills, integrity, flexibility, resourcefulness, and superb communication/presentation skills round out your skill set.

We have a competitive compensation package, including incentive-based performance bonus, a capital gain arrangement, and exit protection. For confidential consideration, send resume to our consultant: L. Christine Visnich, Bason Associates, Dept. 19, 11311 Cornell Park Drive, Suite 200, Cincinnati, OH 45242, or fax (513) 469-9691.

### MEDICAL UNIVERSITY OF SOUTH CAROLINA CHAIR

### Department of Biochemistry and Molecular Biology

The MEDICAL UNIVERSITY OF SOUTH CAROLINA has initiated a search for a Ralph F. Hirschmann Chair of Biochemistry to lead its Department of Biochemistry and Molecular Biology. The Medical University is actively expanding its research base with facilities currently being renovated and a major new research building to be occupied by fall 1996. There are excellent opportunities to recruit new faculty into a department of 13 full time faculty. Significant resources are available to support new growth and revitalization. The Department currently has well-established research programs focusing on pro-tein structure and function. The academic environment provides outstanding opportunities for research initiatives in interdisciplinary/interdepartmental programs/centers in cardiovascular biology, cancer, cell and molecular endocrinology, molecular medicine, and structural biology. In addition to the facilities within the Department, an expanding campus-wide Institutional Research Resource provides an array of analytical capabilities including image analysis, electron and confocal microscopy, DNA, peptide sequencing and synthesis, NMR, and mass spectrometry.

Candidates for this position should have a Ph.D. and/or M.D. degree, a distinguished record of scholarly activity, a nationally recognized research program that can synergistically interact with research strengths and interests of the University, and a commitment to scientific excellence with leadership skills to administer a comprehensive academic program. Interested individuals should submit a letter of application, curriculum vitae that includes a summary of their research activities, and three references to: Roger R. Markwald, Ph.D., Chairman, Biochemistry Search Committee, 601 CSB Dean's Office, College of Medicine, Medical University of South Carolina, 171 Ashley Avenue, Charleston, South Carolina 29425. Nominations and applications should be submitted by January 1, 1997.

The Medical University of South Carolina is an Equal Opportunity/Affirmative Action Employer.

### THE JOHNS HOPKINS UNIVERSITY BIOPHYSICS

As part of a programmed expansion, the Thomas C. Jenkins Department of Biophysics plans to appoint a faculty member, most likely at the **ASSISTANT PROFESSOR** level, with research interests involving the experising a quantitative approach to problems of biological interest is an important qualification.

Possible research areas include, but are not limited to: spectroscopy; membrane biophysics; macromolecular structure; kinetics and energetics; and mechanotransduction.

To apply, please send curriculum vitae, a brief description of your research plans, and the names of three references to:

> Eaton Lattman, Chair T. C. Jenkins Department of Biophysics Johns Hopkins University 3400 North Charles Street Baltimore, MD 21218 Telephone: 410-516-7245

Additional information can be obtained from Eaton Lattman, Email: Ed.Lattman@qmail.bs.jhu.edu. Applications should be received by November 30, 1996.

Johns Hopkins University is an Equal Opportunity/Affirmative Action Employer and actively encourages applications from minorities and women.

### FACULTY POSITION DEVELOPMENTAL BIOLOGY

The Molecular and Cell Biology Department of the University of Texas at Dallas invites applications for a tenure-track faculty position in the general area of molecular developmental biology to begin 1 September 1997 The preference is for candidates at the ASSISTANT **PROFESSOR** level, but highly qualified applicants at more advanced levels will also be considered. The Department is actively involved in basic research, graduate training at the doctoral level, and educating a select group of undergraduate students. Applicants should have at least two years of postdoctoral experience and should demonstrate a vigorous and independent research program ca-pable of obtaining external support. Teaching responsi-bilities will include participation in appropriate graduate and undergraduate courses. The start-up package, salary, and teaching requirements are competitive. Applicants should forward a curriculum vitae including the names, addresses, and telephone numbers of at least three references plus a description of research interests and plans to: Academic Search Number 2027, The University of Texas at Dallas, P.O. Box 830688, Richardson, TX 75083-0688. Review of applications will begin immediately and applications will be accepted until 1 January 1997. Indication of sex and ethnicity is requested as part of the application for Affirmative Action statistical purposes but is not required. The University of Texas at Dallas is an Affirmative Action/Equal Opportunity Employer.

#### HARVARD UNIVERSITY Department of Chemistry and Chemical Biology Assistant Professorships in Inorganic, Organic, and Physical Chemistry

Applicants are invited to apply for ASSISTANT PRO-FESSORSHIPS in inorganic, organic, and physical chemistry. Applicants should arrange to have three letters of recommendation sent independently and should provide a curriculum vitae, a list of publications, and outlines of two future research projects. Applications and supporting materials should be sent no later than 1 November 1996 to: Professor David A. Evans, Chairman, Department of Chemistry and Chemical Biology, Harvard University, 12 Oxford Street, Cambridge, MA 02138-2902. Harvard University is an Affinnative Action/ Equal Opportunity Employer and welcomes applications from women and minority group members.

The Smith College Department of Biological Sciences is seeking a full-time, tenure-track **ASSISTANT PRO-FESSOR** in Eukaryotic Microbial Physiology starting September 1, 1997. Candidates should have a Ph.D., a commitment to teaching and a strong research program. Preference given to persons with significant teaching and/or postdoctoral experience. Send a curriculum vitae, statement of teaching philosophy and research interests, and three recommendations to: **Prof. S. P. Scordilis**. **Department of Biological Sciences, Smith College, Northampton, MA 01063** by November 15, 1996.

### POSITIONS OPEN

### FACULTY POSITIONS NEUROBIOLOGY

The Department of Neurobiology, University of Pittsburgh School of Medicine, is inviting ap-plications for TENURE-TRACK positions at all ranks. Preference will be given to applicants with research programs investigating mechanisms of signal transduction in cell-cell interactions, particularly related to development, synaptic transmission, and plasticity in the nervous system. It is expected that the successful candidates conduct a competitive research program in which molecular and cellular approaches are emphasized to complement current department strengths in developmental and systems neurobiology. The positions require a Ph.D. and/or M.D. with at least two years of postdoctoral experience. Competitive salary support and start-up funds will be made avail-able. Applicants should submit by December 31, 1996, a curriculum vitae, a detailed description of future research goals, representative recent publications, and names and addresses of three references to: Dr. Pat Levitt, Chair, Department of Neurobiology, University of Pittsburgh School of Medicine, E1446 Biomedical Science Tower, Pittsburgh, PA 15261. The University of Pittsburgh is an Equal Opportunity Employer.

The Department of Biochemistry seeks applications for a tenure-track position at the **ASSISTANT PROFES-SOR** level. The Department is interested in receiving applications from persons whose research involves studies in plant biochemistry. Applicants should have demonstrated productivity and evidence of potential for independent research. The successful applicant will have an opportunity to participate in the Center for Protein Structure and Design and the Center for New Plant Products, two areas of emphasis developed with the support of Research Excellence Funds provided by the State of Michigan.

The Department of Biochemistry has a large faculty conducting research in most areas of contemporary biochemistry and molecular biology, providing both a stimulating scientific atmosphere and opportunities for research collaboration. The Department occupies a modern research building with well-equipped research and teaching laboratories, and has vigorous undergraduate, graduate, and postdoctoral training programs.

Applicants should submit a curriculum vitae and a description of research accomplishments and future interests, and should have three letters of recommendation sent on their behalf to: William L. Smith, Chairperson, Department of Biochemistry, Box S, Michigan State University, East Lansing, MI 48824-1319. To ensure consideration, applications should be received by December 31, 1996, although qualified late applicants may also be considered. Michigan State University is an Equal Opportunity/Affinative Action Employer. The Biodemistry faculty welcomes candidates from underepresented groups.

#### FACULTY POSITIONS/MICROBIOLOGY The University of Texas Health Science Center at San Antonio

The Department of Microbiology of The University of Texas Health Science Center at San Antonio (UTHSCSA) invites applications for tenure-track faculty positions at the **ASSISTANT, ASSOCIATE**, or **FULL PROFES-SOR** level. Expertise in microbial pathogenesis (fungal/ bacterial/parasitic) is preferred, but individuals with outstanding backgrounds in other areas and an interest in extending their research to include studies of medically relevant microbes are also encouraged to apply. The successful applicant will have a Ph.D. and/or M.D. degrees and is expected to establish a high quality, extramurally funded research program and to participate in graduate student training and medical/dental school teaching.

Send curriculum vitae, summary of research interests, and the names and addresses of three references to: Microbiology Search Committee, Department of Microbiology, The University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, TX 78284-7758. Information concerning the UTHSCSA and the Department of Microbiology can be found through the World Wide Web address at http:// www.uthscsa.edu.

The UTHSCSA is an Equal Employment Opportunity/Affirnative Action Employer.

### POSITIONS OPEN

### ASSISTANT PROFESSOR MICROBIOLOGY/IMMUNOLOGY

The Department of Microbiology/Immunology of the Northeastern Ohio Universities College of Medicine (NEOUCOM) is seeking applicants to fill a **TENURE-TRACK** position in the area of molecular microbial pathogenesis. Candidates must have a Ph.D. and/or M.D. degree with appropriate postdoctoral/fellowship training, a strong record of research accomplishments, and the ability to establish an independent externally funded program. Medical student teaching responsibilities will be in the area of general/medical microbiology as it pertains to microbial genetics, gene regulation, and basic mechanisms of microbial pathogenesis.

Department faculty are members of the graduate faculty in programs leading to the Ph.D. through the School of Biomedical Sciences at Kent State University. The successful candidate will have the opportunity to develop graduate courses that relate to their specialty.

The department is housed in new, fully equipped research laboratories with state-of-the-art core facilities. Department faculty carry out research in the area of the regulation of DNA synthesis, the molecular basis of viral pathogenesis, viral latency, neuroimmunology, and vaccine design.

Candidates should send a letter of application describing research goals, accompanied by a curriculum vitae and names and addresses of three references, by December 15, 1996 to:

#### John J. Docherty, Ph.D. Chairperson Department of Microbiology/Immunology NEOUCOM, P.O. Box 95 Rootstown, OH 44272-0095

NEOUCOM is an Affirmative Action/Equal Opportunity Employer.

### TRANSPLANT IMMUNOLOGIST

The Heart Failure and Cardiac Transplant Program of the Rush Heart Institute at Rush-Presbyterian-St. Luke's Medical Center is seeking to recruit a full-time, tenuretrack faculty member at the ASSISTANT PROFESSOR level, to establish an independent research program in the cellular immunology of transplantation. The Rush Heart Failure and Cardiac Transplant Program is part of a large cardiovascular medicine program active in both basic sci-ence and clinical medicine. Rush-Presbyterian-St. Luke's Medical Center is a center for the transplantation of all of the vascularized organs and bone marrow. The expansion of the ongoing collaborative investigation among these transplantation programs is an important institutional focus. Joint appointment in an appropriate basic science department is available and encouraged. Support in the form of laboratory space and start-up funds will be made available. The successful candidate will have a strong record of graduate and postdoctoral training, as evidenced by a competitive up-to-date publication record and the demonstrated ability to attract extramural funding.

Interested applicants must submit a curriculum vitae, a statement of research interests, and the names of three references to: Maria Rosa Costanzo, M.D., Director, Rush Heart Failure and Cardiac Transplant Program, Suite 439, Rush-Presbyterian–St. Luke's Medical Center, 1725 West Harrison; Chicago, IL 60612-3824.

### ASSISTANT PROFESSOR VETERINARY MOLECULAR BIOLOGY

Applications are invited for a tenure-track ASSIST-ANT PROFESSOR position. This position is 90% research, 10% instruction, and is supported by a generous start-up package, including technical support. Salary range is \$42,000 to \$50,000 based on experience and qualifications. Required qualifications: Ph.D. or Ph.D./ D.V.M. in a biomolecular discipline, postdoctoral experience, and potential to establish, or evidence of, a competitive, independent research program. Areas of research interest for this position broadly encompass molecular and cellular models of infectious disease of viral or bacterial origin and the study of host responses to these agents. Interested applicants should send curriculum vitae, selected reprints, a summary statement concerning research plans and grant proposals, and arrange for three letters of reference to be sent to: Chair, Search Committee, Veterinary Molecular Biology, Montana State Universi-ty, Bozeman, MT 59717-3610. Screening will begin November 1. ADA/Equal Opportunity/Affinnative Action/ Veterans Preference.

## POSTDOCTORAL POSITIONS ' BIOCHEMIST/MOLECULAR BIOLOGIST

The Cell & Molecular Biology Group in the Life Sciences Division is seeking postdoctoral candidates to participate in an anticipated project that will involve the development of peptidebased strategies to inhibit protein-protein interactions on mammalian cell surfaces. Candidates should have demonstrated experience in protein expression and purification, "display library" technologies (especially phage display), and the development of cell-based and *in vitro* biochemical assays of proteinprotein interactions. Ability to obtain a Q clearance which normally requires US Citizenship. For further technical inquiries, contact Bruce E. Lehnert, Ph.D., tel: (505) 667-2753, fax:(505) 665-3024, e-mail: lehnert@telomere.lanl.gov

A Ph.D. within the last three years or soon to be completed is required. Annual starting salaries currently range from \$42,740 to \$46,180 plus a generous, comprehensive benefits package. For consideration, submit TWO COPIES of a resume with publication listing and the names, addresses, and phone numbers of at least three individuals who will provide references to: Postdoctoral Program, Advertisement **#PD96116**, Los Alamos National Laboratory, MS P290, Los Alamos, NM 87545. Affirmative Action/Equal Opportunity Employer. Individuals with disabilities needing reasonable accomodation should call (505)667-8622. A Teletype Device for the Deaf (TDD) is available by calling (505)665-5357. Los Alamos National Laboratory is operated by the University of California for the U. S. Department of Energy.

> LOS Alamos NATIONAL LABORATORY

## NATIONAL INSTITUTE OF MENTAL HEALTH CHIEF, COGNITIVE NEUROSCIENCE PROGRAM

The National Institute of Mental Health, Division of Neuroscience and Behavioral Science, invites applications for the position of Chief, Cognitive Neuroscience Program in the Behavioral & Integrative Neuroscience Research Branch. The Branch stimulates, plans and supports programs broadly in the neurosciences to understand the neural substrate subserving behavior. The Cognitive Neuroscience Program represents a major segment of the Branch and is designed to develop and support basic neurobehavioral studies focussing on cognitive research to provide fundamental knowledge to understand, evaluate and treat emotional and mental disorders.

Qualifications include a Ph.D. in psychology, biology, pharmacology, neurosciences, or other directly related specialization, or equivalent training and relevant experience. Candidates will be evaluated based on ability to manage major research programs; professional knowledge of the scientific principles, theories and practices applicable to the study of cognitive neuroscience; oral and written communication skills. Minorities and women are encouraged to apply.

This is a GS-13/14 Civil Service position with a salary range from \$52,867 to \$86,411per annum. In addition, a recruitment bonus may be paid and relocation expenses may be paid. Physicians may be eligible for a Physician's Comparability Allowance (PCA) of up to \$10,000 a year. Benefits include a retirement plan, health and life insurance, Thrift Saving Plan, and sick and annual leave. The position may also be filled through the Commissioned Corps of the Public Health Service. U.S. citizenship is required.

If interested, please submit an Optional Application for Federal Employment (OF-612) or a resume or C.V. plus bibliography to Ms. Margot Darby, NIMH, Personnel Management Branch, 5600 Fishers Lane, Room 7C-15, Rockville, MD 20857. Candidates are encouraged to address the evaluation criteria noted above in a supplemental statement. Applications will be accepted until a postmarked deadline of December 8, 1996. For further information call Ms. Darby at (301)443-9094.

NIH IS AN EQUAL OPPORTUNITY EMPLOYER

National Defense Science and Engineering Graduate Fellowships STARTING IN ACADEMIC YEAR 1997 - 1998

As a means of increasing the number of U.S. citizens trained in disciplines of science and engineering of military importance, the Department of Defense plans to award approximately 90 new threeyear graduate fellowships in April 1997. National Defense Science and Engineering Graduate Fellowships will be awarded for study and research leading to doctoral degrees in, or closely related to, the following disciplines:

> AERONAUTICAL AND ASTRONAUTICAL ENGINEERING BIOSCIENCES (Includes Toxicology) CHEMICAL ENGINEERING CHEMISTRY COGNITIVE, NEURAL, AND BEHAVIORAL SCIENCE COMPUTER SCIENCE ELECTRICAL ENGINEERING GEOSCIENCES (Includes terrain, water, and air) MATERIALS SCIENCE AND ENGINEERING (Includes Manufacturing Sciences and Engineering) MATHEMATICS MECHANICAL ENGINEERING NAVAL ARCHITECTURE AND OCEAN ENGINEERING OCEANOGRAPHY PHYSICS (Includes Optics)

National Defense Science and Engineering Graduate Fellows selected in 1997 will receive a stipend in addition to full tuition and required fees. The amount of the stipend is \$17,000 for 1997-1998; \$18,000 for 1998-1999; \$19,000 for 1999-2000.

## Recipients of 1997-1998 National Defense Science and Engineering Graduate Fellowships do not incur any military or other service obligation.

Specific information regarding the fellowship and an application package are available from Battelle Memorial Institute, a not-for-profit research institution, which is administering the program for the Department of Defense.

Additional information and an application are available from:

NDSEG Fellowship Program 200 Park Drive, Suite 211 P.O. Box 13444 Research Triangle Park, NC 27709-3444 ATTN: Dr. George Outterson Phone: (919) 549-8505 Fax: (919) 549-8205 NDSEG@ARO-EMH1.ARMY.MIL http://www.battelle.org/ndseg/ndseg.html

Completed applications must be received by Battelle by January 15, 1997.



### ASSISTANT PROFESSOR OF BIOCHEMISTRY MOLECULAR STRUCTURE University of California, Riverside

The Department of Biochemistry invites applications for a tenure-track position of ASSISTANT PROFES-SOR of Biochemistry. Qualifications for the position include a strong potential for imaginative research in the physical biochemistry of macromolecular structure-function. Individuals whose scholarship is broadly in areas of high resolution structure determination and analysis of function on a problem of fundamental biological significance are encouraged to apply. A high research potential and a strong commitment to teaching excellence in both undergraduate and graduate (M.S. and Ph.D.) instruction are required. The position also includes appointment in the Agricultural Experiment Station. Applicants must hold a Ph.D. or equivalent degree and have postdoctoral experience. Interested individuals should submit a curriculum vitae, bibliography (including three recent reprints), and a brief (limit of 500 words) description of proposed research interests, and should request that three to five original letters of reference be sent separately to: Chair of Search Committee, Department of Biochemistry 015, University of California, Riverside, CA 92521-0129. Evaluation of applications will begin October 31, 1996, but the position will be open until filled. The University of California is an Equal Opportunity/Affirmative Action Employer.

### CELL/DEVELOPMENTAL BIOLOGIST

A tenure-track position in cell biology is available at the ASSISTANT PROFESSOR level in the Biology Department at Wesleyan University. We are especially interested in candidates with strength in molecular and developmental biology. The appointee is expected to complement existing departmental strengths in development, evolution, genetics, and neurobiology. Candidates should have a Ph.D. and at least two years

Candidates should have a Ph.D. and at least two years of postdoctoral experience. The successful applicant will be expected to set up an independent research program and to participate in the departmental Ph.D. program. Teaching will be primarily in the area of cell biology at the undergraduate and graduate levels. Wesleyan's Biology Department is housed in well-equipped laboratories with a research-oriented faculty that successfully attracts outside funding. Please send us your curriculum vitae and a concise statement of future research plans, and have three letters of recommendation sent to: Cell Biology Search Committee, Department of Biology, Wesleyan University, Middletown, CT 06459-0170 by October 31, 1996. Wesleyan is proud of its record of commitment to diversity in the student body, faculty, and staff, and encourages applications from uponen and persons of color. Wesleyan University is an Equal Opportunity/Affirmative Action Employer.

Miami University–Oxford Campus, Department of Chemistry invites applicants with Ph.D. degree for a tenure-track ASSISTANT PROFESSOR position in or-ganic chemistry starting in August 1997. The successful candidate will have a demonstrated research interest in bioorganic chemistry. Possible subdisciplines include, but are not restricted to, biomimetic, combinatorial, medicinal, and supramolecular chemistry. Applicants should have a strong commitment to developing an externally funded research program and to teaching at the under graduate and graduate levels. Qualified persons should 1) submit their curriculum vitae and a detailed description of their research interests, and 2) arrange for three letters of recommendation to be sent to: Chemistry Search Committee, Miami University, Oxford, OH 45056. Review of applications will begin November 15, 1996. The search will continue until the position is filled. Incomplete applications will not be reviewed. Because Miami University is an Equal Opportunity/Affirmative Action Employer, women and minorities are particularly encouraged to apply for this position.

### RESEARCH ASSISTANT PROFESSOR Vascular/Matrix Biology

NIH-supported position to study vascular immunobiology and matrix biology. Active interests include regulation of matrix and metallaproteinase expression by inflammatory cells. Two years of postdoctoral experience in biochemistry and molecular biology required. Send curriculum vitae, summary of research experience, and reprints to: B. Timothy Baxter, M.D., Department of Surgery, University of Nebraska Medical Center, 600 South 42nd Street, Omaha, NE 68198-3280. An Equal Opportunity/Affirmative Action Employer. Minorities and uvonen are encouraged to apply.

#### DEAN, COLLEGE OF NATURAL RESOURCES UTAH STATE UNIVERSITY

Applications or nominations are invited for the DEAN of a 90-faculty, 750-student college Qualifications: Earned doctorate; teaching and scholarship commensurate with full professorship in a natural- or social-scientific discipline related to renewable natural resources (fisheries and wildlife, forests, water, rangelands) systems; administrative effectiveness, preferably in higher education; understanding of role of land-grant institutions, including extension; knowledge of international development and extramural funding; interpersonal skills and effective communication. Locale: University of 20,000 situated in Logan (40,000 population), surrounded by Wasatch Mountains, with abundant cultural and outdoor opportunities. Applications: Send cover letter, curriculum vitae, request for detailed application material to: Frederic H. Wagner, Search Committee Chair, College of Natural Resources, Utah State University, Logan, UT 84322-5200. Email: ecol@cc.usu.edu; Telephone: 801-797-2445. Application reviews begin December 1 1996 and continue until position is filled. Utah State University is an Affirmative Action/ Equal Opportunity Employer.

#### DIRECTOR OF THE CENTER OF BIOENGINEERING University of Washington

The University of Washington seeks a candidate for the position of Director of the Center for Bioengineering. The occupant will hold a **TENURED PROFESSORI-AL** rank in the Center for Bioengineering, which is in both the College of Engineering and the School of Medicine. The Director will lead actively to further develop the research and teaching programs of the Center. The Center for Bioengineering has active research programs in biomaterials, biomechanics, cellular bioengineering, biomedical instrumentation. Its graduate program serves more than 100 students of whom the majority are pursuing doctoral degrees. Its undergraduate program serves a small number of superb students who intend to enter either M.D. or M.D./Ph.D. programs. The Center has 30 core faculty, 35 adjunct faculty, and 20 affiliate faculty. The Center for Bioengineering has strong collaborative ties with colleagues in the School of Medicaline and the College of Engineering.

Nominations and applications should be submitted to:

#### Professor Yongmin Kim, Chair Bioengineering Director Search Committee Department of Electrical Engineering University of Washington Box 352500 Seattle, WA 98195-2500

Review of applications began on September 1, 1996, but applications will be received until the position is filled. Applications should include a curriculum vitae, a statement of interests and goals, and the names of five references.

The University of Washington is building a culturally diverse faculty, and strengly encourages applications from female and minority candidates. The University is an Equal Opportunity/Affirmative Action Employer.

### CELL/MOLECULAR BIOLOGIST

Texas Christian University (TCU) seeks to fill a tenuretrack position at the ASSISTANT PROFESSOR level beginning fall 1997. Responsibilities include teaching in team-taught general biology and cell/molecular biology courses for biology majors/pre-medical students; developing an upper-level specialty course; participating in academic advising; and conducting independent research. The department has a 12-member faculty with diverse interests in biology. Applicants should send a curriculum vitae including a statement indicating teaching and research interests and experience, and should arrange to have three letters of recommendation sent to: Dr. Phil Hartman, TCU Box 298930, Texas Christian University, Forst Worth, TX 76129. Review of applicants will begin October 18, 1996. Background information about TCU as well as the Biology faculty may be obtained at: www.tcu.edu.

### POSITIONS OPEN

### UNIVERSITY OF CONNECTICUT Ecology and Evolutionary Biology

The Department of Ecology and Evolutionary Biology invites applications for two anticipated tenure-track AS SISTANT PROFESSOR positions beginning September 1997: 1) A vertebrate biologist (Search Number 97A84) working on the biology of birds or mammals, including behavior, morphology, evolution, or systematic biology. Duties include a course in ornithology, part of a course in vertebrate biology, and other courses as appropriate. 2) An empirically oriented plant/ecosystem ecologist (Search Number 97A83) working on the role of plants in ecological processes at the community, ecosystem, or landscape level, including plant-soil-nutrient interactions, terrestrial ecosystem dynamics, and spatial processes within ecosystems and landscapes. Duties include an undergraduate course in general ecology, a graduate course module in ecosystem ecology, and other courses as appropriate. Review of applications begins January 2, 1997. Send a letter of application, statement of teaching and research interests, curriculum vitae, selected reprints, and three letters of recommendation to: 1) Dr. Kentwood D. Wells, U-43, Email: kentus@uconnvm. uconn.edu or 2) Dr. Robin L. Chazdon, U-42, Email: chazdon@uconnvm.uconn.edu, Department of Ecology and Evolutionary Biology, University of Con-necticut, 75 North Eagleville Road, Storrs, CT 06269. We encourage applications from underrepresented groups, including minorities, women, and people with disabilities

FACULTY POSITIONS in Molecular Neurobiology: The Ohio State University is undertaking a major initiative in molecular life sciences research that will include at least thirty new faculty positions in the next five years and has made a major commitment to develop an outstanding interdisciplinary program in neuroscience. Applications are invited for a tenure-track faculty position at the Assistant or Associate Professor level. The successful candidate will have a position in either the College of Dentistry, College of Medicine, or College of Pharmacy, with a joint appointment in the Neurobiotechnology Center. A transgenic mouse facility and other excellent support facilities are available. The new faculty member will be expected to develop an independent research program that employs molecular biological approaches to address problems in neurobiology, and to contribute to the teaching mission of the home department. Applicants should submit a curriculum vitae and a statement of research plans, and should arrange to have three letters of reference sent to: Dr. James S. King, Chairperson, Mo-lecular Neurobiology Search Committee, 4072 Graves Hall, 333 West Tenth Avenue, Columbus, OH 43210-1239. Deadline: December 1, 1996. The Ohio State University is an Equal Opportunity/Affirmative Action Employer, Women, minorities, Vietnam-era veteraus, disabled vet-erans and individuals with disabilities are encouraged to apply.

### LAW AND SCIENCE FACULTY POSITION

Vermont Law School seeks a FACULTY member to strengthen its interdisciplinary approach to teaching law and science, with emphasis on environmental regulation and natural resource management. The faculty member would teach a basic course in science for lawyers and more specialized offerings in the environmental and general law curricula. The successful candidate will have both a J.D. and a Ph.D., or equivalent, in one of the physical sciences (e.g., biology, chemistry, ecology, physics). Applications should be submitted to: Professor Stephanie J. Willbanks, Faculty Appointments Committee, Vermont Law School, P.O. Box 96, South Royalton, VT 05068. Vermont Law School is an Equal Opportunity Employer and enformages applications from and nominations of women and minority candidates.

### TROPICAL ECOLOGIST

The Department of Botany at the University of Florida invites applications for a tenure-track ASSISTANT or ASSOCIATE PROFESSOR position in tropical ecology to begin in the fall semester of 1997. Preference will be given to an experienced researcher (Ph.D.) working on ecosystem processes who is interested in teaching at both graduate and undergraduate levels. Applicants should arrange to have a curriculum vitae, brief statements of research interests and teaching philosophy, and three letters of recommendation sent to: Tropical Ecology Search Committee, Department of Botany, University of Florida, Gainesville, FL 32611, by 30 November 1996. The University of Florida is an Equal Opportunity/Affinantive Action Employer and actively seeks applications from minorities and women. RiboGene is the first biotechnology company using translation control to develop new classes of therapeutic agents for infectious diseases. Our approach is to intervene in the translational control of gene expression.

### STAFF SCIENTIST Antifungal Group

In addition to participating in the development of new biochemical assays for a semiautomated high-throughput screening program, you will actively develop and use biochemical mechanism-of-action assays for characterizing the activities of new chemical entities. You must possess a Ph.D. in a related science with up to 6 years' relevant postgraduate experience. Practical knowledge of protein biochemistry is required as is previous experience in protein purification and/or enzyme assay development. Practical experience with microbiological techniques, DNA or RNA preparation, or in vitro translation systems would be an advantage.

### **STAFF SCIENTIST** Antibacterial Group

You will be responsible for developing new screening systems targeting bacterial translation for use in our antibacterial drug discovery program. You will develop, test, and validate high throughput primary assays as well as follow-up mechanism-of-action studies. Requires a Ph.D. in bacteriology and 2-6 years of relevant postdoctoral experience in molecular biology or bacterial genetics.

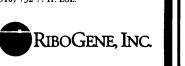
### **RESEARCH ASSOCIATE** Antifungal Group

Will assist the Screening Group in configuring new microbiological and biochemical assays for semi-automated HTS operation and increasing throughput of existing assays. Additionally, you will perform high-throughput biochemical and microbiological screening assays in 96-well microplates and all aspects of data analysis. A BS in a biological science and 4-6 years' experience working in an HTS environment is required along with previous experience performing HTS assays using manual and semi-automated equipment. Practical experience with microbiological techniques, DNA or RNA preparation a must.

### **RESEARCH ASSOCIATE** Antiviral Group

You will participate in follow-up screening of lead compounds from primary screening assays. You will work closely with the Screening Group in optimizing biochemical assays based on viral translation, and in evaluating lead antiviral compounds. Requires a BS in biological sciences and an MS or 2 years of equivalent experience. Experience in tissue culture is required; virology and high-throughput screening experience is highly desirable.

RiboGene offers competitive salaries and benefits. For consideration, send your resume to: Human Resources, RiboGene, Inc., 21375 Cabot Boulevard, Hayward, CA 94545 or FAX (510) 732-7741. EOE.



# Pharmaceutical Opportunities

SmithKline Beecham, a world renowned innovator in consumer healthcare, pharmaceutical R&D and genetic medicine, continues to experience outstanding success. As a result, we seek to add the following professionals to join our industry-leading scientific team:

## Postdoctoral Scientist, Pharmacology

This postdoctoral scientist with a background in molecular and cell biology will investigate the structure, kinetics and biological function of cyclic nucleotide phosphodiesterases. The selected individual will work collaboratively with intra- and extra-departmental scientists to evaluate the kinetic behavior and biological function of native and recombant cyclic nucleotide phosphodiesterases; integrate molecular biological and pharmacological techniques to evaluate the function of phosphodiesterases; and gain recognition in the scientific community through publication of scientific results and participation in national meetings.

Qualified candidates will possess a PhD in Molecular Biology, Biochemistry, Pharmacology or related discipline with 0-3 years of postdoctoral experience; a desire to integrate multiple approachès to understand the nature and function of phosphodiesterases; strong communication skills, and a record of publications in major scientific journals. Experience with standard molecular biology techniques is required, and experience with standard techniques in pharmacology, cell biology and enzymology is preferred. **Refer to Job Code H6-0371**.

## Molecular Pharmacologist

This scientist will assist in planning and conducting laboratory experiments in molecular and cellular pharmacology directed towards identifying novel molecular mechanisms involved in the pathogenesis of a variety of cardiovascular disorders. Experience with cell culture, standard recombinant DNA technology (e.g. Northern/ Southern analysis, mammalian cell transfection and expression cloning, RT-PCR, mRNA differential display, *in situ* localization) and protein biochemistry are highly desirable.

Qualified candidates will possess a BS/MS in biomedical sciences with 3+ years of laboratory experience, preferably in the area of cell cycle regulation. A working knowledge of cardiovascular pharmacology is desirable but not essential. Refer to Job Code CV-SD.

## Associate Scientist/Scientist Cardiovascular Pharmacology Molecular/Cell Biology

This motivated and organized scientist will conduct experiments in support of R&D efforts to treat cardiovascular disease by participating in planning and implementing experiments designed to identify new molecular targets in cardiac and vascular tissue as well as to discover new drugs for existing targets. The selected candidate will be expected to maintain a working knowledge of the scientific and technical literature related to ongoing laboratory projects, to critically evaluate data, to participate in oral presentations of data, and to assist in writing manuscripts. Managing daily operations in the laboratory and maintaining proper documentation of experiments in laboratory notebooks is also expected.

Qualified candidates will possess a BS or MS in Molecular Biology, Cell Biology, Pharmacology or related field with 2+ years of laboratory experience; and technical expertise in Molecular Biology and Tissue Culture is required. Solid computer skills and proficiency in Bioinformatics (e.g. GCG, SwissProt) expected. Experience with development of in vitro screening assays (e.g. ELISA) is helpful. A background in vascular biology, receptor biology, extracellular matrix and tissue remodeling, signal transduction or transcription factors is beneficial. **Refer to Job Code CV-KA**.

Located in our state-of-the-art research facility in suburban Philadelphia, SmithKline Beecham offers a competitive compensation and benefits package. For confidential consideration, please forward your resume and salary requirements to: SmithKline Beecham Pharmaceuticals, Job Code —, P.O. Box 2645, Bala Cynwyd, PA 19004. Indicating Job Code is essential. We are an Equal Opportunity Employer, M/F/D/V.



### DEPARTMENT OF BOTANY UNIVERSITY OF WASHINGTON Plant Ecologist

The Department of Botany invites applications for an ASSISTANT PROFESSOR, tenure-track position in plant ecology. The successful candidate must have received a Ph.D. degree, will be expected to teach undergraduate plant ecology and advanced courses in one or more specialties and to develop an externally funded research program, and will complement existing strengths in ecology and evolutionary biology. The ideal candidate will have one or more years of postdoctoral experience with an educational background focus in one or more of these subdisciplines: physiological ecology, evolutionary ecology, plant-herbivore or plant-microbe interactions, community structure, ecosystems processes, or conservation biology. Please send curriculum vitae, statement of teaching and research interests, and up to five publications, and arrange for three letters of recommendation to be sent to: Dr. Douglas Schemske, Chair, Search Com-mittee, Department of Botany, Box 355325, University of Washington, Seattle, WA 98195-5325. Priority will be given to applications received by 22 November 1996. The University of Washington is building a culturally diverse faculty and strongly encourages applications from women and minority candidates. Affirmative Action/Equal Opportunity Employer.

### MEDICAL BACTERIOLOGY

The Department of Biological Sciences at California State University, Long Beach, welcomes applications for a tenure-track position at the ASSISTANT PROFES-SOR level. A Ph.D. in the biological sciences with training and research in the area of medical bacteriology is required. Candidates must demonstrate potential for effective teaching in medical bacteriology in an ethnically and culturally diverse campus community. Must have a record of published research and show potential for developing and sustaining an independent, externally funded research program involving students. Postdoctoral experience preferred. Responsibilities include research and participation in teaching at the undergraduate/M.S. levels in medical bacteriology and related areas including the introductory core course. Send letter of application, curriculum vitae, statement of research and teaching interests, and three letters of recommendation to: Dr. Laura Kingsford, Acting Chair, Department of Biological Sciences, California State University, Long Beach, CA 90840-3702. Review of applications will begin November 3, 1996. An Equal Opportunity/Affirmative Action/Title IX Employer.

Department of Chemistry and Biochemistry, University of Maryland at College Park (UMCP), invites applications for **TENURE-TRACK** or tenured positions in Biochemistry. Candidates at all levels (Assistant, Associate, or Full Professor) with an interest in developing chemical and biochemical approaches to research problems in biology are encouraged to apply. Successful candidates may also participate in the campus-wide graduate Program in Molecular and Cell Biology. Submit a curriculum vitae and short description of research plans, and arrange for three letters of reference to be sent to: **Biochemistry Search Committee, Department of Chemistry and Biochemistry, University of Maryland, College Park, MD 20742-2021**. Applications should be received by November 15, 1996 for best consideration. *UMCP encourages applications from women and members of minority groups and is an Equal Opportunity/Affirmative Action Employer.* 

### ALLIED HEALTH/BIOLOGY

Tenure-track position in the sports medicine program in the Allied Health/Biology Department at the **ASSIST ANT PROFESSOR** level beginning January 1997 or September 1997. Candidates will preferably possess a Ph.D. and teaching experience at the undergraduate level in the areas of anatomy and physiology, exercise physiology, and biomechanics. Candidates with a Master's degree and clinical expertise in physical therapy will also be considered. Demonstrated excellence in teaching and continued involvement in research in human anatomy/ physiology or exercise physiology, particularly that which could involve undergraduates, are expected. Teaching load is 12 contact hours per semester. Send résumé and three letters of reference by November 1, 1996, to: Dr. **Marcia Walsh, Biology Department (Box N-8), Merrimack College, 315 Turnpike Street, North Andover, MA 01845.** Equal Opportunity Employer. Women and minorities encouraged to apply.

#### THE JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE MOLECULAR BIOLOGIST

The Department of Pathology invites applications for a tenure-track faculty position at the rank of **INSTRUCTOR** or **ASSISTANT PROFES-SOR**. Candidates should have an outstanding record in research and experience in tumor biology. M.D., Ph.D. degree preferred. Salary will be commensurate with experience and accomplishments. Applications and nominations should be sent with a current curriculum vitae to:

### Peter C. Burger, M.D. The Johns Hopkins Medical Institutions 600 North Wolfe Street Baltimore, MD 21287-6417.

The Johns Hopkins University is an Equal Employment Opportunity/Affirmative Action Employer. Women, minorities, Vietnam-era veterans, disabled veterans, and individuals with disabilities are encouraged to apply. Drugfree and smoke-free.

### FACULTY POSITION MOLECULAR GENETICS

The Department of Genetics, University of Illinois College of Medicine, is seeking candidates for a faculty position in molecular biology and genetics. The position, starting on or after July 1, 1997, will be for tenure-track ASSISTANT PROFESSOR up to tenured FULL PROFESSOR, depending upon the candidate's qualifications. Candidates must have a Ph.D. or its equivalent plus postdoctoral research experience in molecular genetics or related areas. Areas of special interest include signal transduction, molecular genetics of human diseases, and problems in yeast systems relevant to mammalian molecular biology. Significant research accomplishments and publications, evidence of outstanding research potential, and success in obtaining external research funding or outstanding potential for such funding, will be key considerations. Applicants should provide a curriculum vitae, names and addresses of four references, and a brief state ment of research interests and plans. To receive fullest consideration, applications should be received by November 15, 1996. Send applications to: Dr. Richard L. Davidson, Head, Department of Genetics (m/c 669), University of Illinois College of Medicine, 900 South Ashland Avenue, Chicago, IL 60607-7170. The University of Illinois is an Affirmative Action/Equal Opportunity Employer.

#### FACULTY POSITION DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY Stritch School of Medicine Loyola University Chicago

The Department of Microbiology and Immunology (Chair Dr. Katherine L. Knight) invites applications for a TENURE-TRACK appointment at a junior or senior level. The candidate is expected to develop an independent, extramurally funded research program using mammalian, yeast, or prokaryotic models to study molecular aspects of immunology, virology, or bacteriology. Excellent facilities and attractive start-up funds are available. Applicants should send a curriculum vitae, a concise statement of their present and future research interests, and names and addresses of three references to: Dr. Katherine Knight, Department of Microbiology and Immunology, Loyola University Chicago, 2160 South First Avenue, Building 105, Maywood, IL 60153.

#### DIRECTOR BIOSTATISTICAL CORE

The Department of Pediatrics at the Children's Hospital Medical Center/University of Cincinnati College of Medicine, Cincinnati, Ohio, is seeking a Ph.D. to direct a biostatistical core support facility for M.D. and Ph.D. researchers in clinical, basic, and health outcomes research. Position requires high quality academic achievement, including extramural grant support. Academic rank will be determined by candidate's credentials and research experience. Send curriculum vitae to: James E. Heubi, M.D., Director, General Clinical Research Center, Children's Hospital Medical Center, 3333 Burnet Avenue, Cincinnati, OH 45229-3039. Children's Hospital Medical Center is an Affirmative Action/Equal Opportunity Institution. Women and minorities are encouraged to apply.

## POSITIONS OPEN

### ASSISTANT/ASSOCIATE PROFESSOR OF PHARMACOLOGY AND TOXICOLOGY

The Department of Pharmacology and Toxicology at the University of North Dakota School of Medicine invites nominations and applications for two tenure-track twelve month appointments at the ASSISTANT or ASSOCIATE PRO-**FESSOR LEVEL**. The appointments are anticipated to be-gin January 1, 1997. Applicants should have a Ph.D. in pharmacology and/or toxicology or related discipline and/or an M.D. with significant research experience. We seek excellence in research of any subdiscipline and excellence in teaching. Currently the departmental faculty is well funded from the NIH and NSF. The applicant will be expected to initiate and maintain a vigorous and independently funded research program. The applicant will also have significant participation in team taught pharmacology and toxicology teaching at the undergraduate, graduate, and professional student level. Applicants should send a letter of application, complete curriculum vitae, statement of research interests and development plan, and arrange three letters of reference to: Paul N. Epstein, Chairman of the Search Committee, Department of Pharmacology and Toxicology, University of North Dakota School of Medicine, 501 North Columbia Road, Grand Forks, ND 58202-9037. Applications will continue to be screened until the position is filled, but should be received by October 15, 1996, for full consideration. University of North Dakota is an Equal Opportunity/Affirmative Action Employer.

### EXECUTIVE DIRECTOR American Institute of Biological Sciences

This is a full-time position with administrative responsibility for the Institute's office in Washington, D.C. American Institute of Biological Sciences (AIBS) is a member- and society-governed federation of 45 scientific societies, museums, and research laboratories and 5,000 individual members, with a full-time staff of 15.

Applicants should have a Ph.D. in the biological sciences or a closely related discipline; at least ten years of professional experience in the biological sciences; experience in education; experience with the executive and legislative branches of the federal government; an appreciation for the research enterprise; and excellent leadership, communication, interpersonal, and writing skills.

Submit a letter of intent, résumé, and the names of five referees by December 9, 1996, to: AIBS Executive Director Search, AIBS, 1444 Eye Street NW, Suite 200, Washington, DC 20005.

AIBS is an Equal Opportunity/Affirmative Action Employer.

### FACULTY POSITIONS

Full-time faculty are being recruited for a new osteopathic medical school, planning to enter its first class in fall 1997. The first two positions, available July 1, 1997 at the ASSISTANT PROFESSOR rank, will be in the. anatomical sciences, one for a gross anatomist and one for a histologist or neuroscientist. Faculty who have, in addition to experience in one of the above subjects, experience in one of the other basic medical sciences (e.g., physiology, biochemistry, microbiology, pharmacology, or pa-thology) are encouraged to apply. Excellent teaching skills are essential. It is expected that faculty will also become involved in productive research. Please send a letter describing your qualifications and interests, a complete curriculum vitae, and the names of three references to: Sandra Piccini, Director of Human Resources, San Francisco College of Osteopathic Medicine, 1210 Scott Street, San Francisco, CA 94115. The San Francisco College of Osteopathic Medicine is an Affirmative Action/ Equal Opportunity Employer.

### ASSISTANT/ASSOCIATE PROFESSORS Parasitology and Vector Biology

The Department of Molecular Microbiology and Immunology at the Johns Hopkins University School of Public Health seeks to recruit two ASSISTANT/ASSO-CIATE PROFESSORS with research experience in parasitology or vector biology. Individuals will be expected to develop independent research programs within an interactive environment of investigators interested in pathogenesis of microbial diseases. There will be opportunities for teaching and training of graduate students. Applicants should send curriculum vitae, description of research interests, and names of three references to: Dr. Diane Griffin, Department of Molecular Microbiology and Immunology, Room E5132 School of Public Health, Baltimore, MD 21205. The Johns Hopkins University actively encourages interest from women and minorities as an Equal Opportunity/Alfimative Action Employer.

## **GRADUATE ESTUARINE RESEARCH FELLOWSHIPS**

The National Estuarine Research Reserve System (NERRS) of the National Oceanic and Atmospheric Administration announces a new program of Graduate Research Fellowships (GRF). The NERRS consist of 21 protected estuarine areas of the United States that are designated, developed, and managed for research and educational purposes. A maximum of 42 GRFs will be competitively awarded to qualified graduate students. The NERRS GRF program is intended to fund high quality research focused on improving coastal zone management while providing students with hands-on training in conducting ecological monitoring. Research projects submitted in response to this announcement must address coastal management issues that relate to the "Scientific Areas of Support" described below. Fellowships will start no earlier than June 1, 1997.

### SCIENTIFIC AREAS OF SUPPORT

Non-point source pollution

Biodiversity and effects of invasive species

Estuarine ecosystem restoration Sustaining estuarine ecosystems

### TERMS AND CONDITIONS

Fellowships may be funded for up to three years. The amount of the award is \$15,000/annum; this may be used for salary, to defray the costs of living expenses, tuition, fees and/or research supplies. The fellow's research must take place within at least one Reserve. Fellows must contact their host Reserve to discuss research and training opportunities. A list of Reserves is provided below. The fellow may be

asked to work with the Research Coordinator or Reserve Manager to develop an ecological monitoring training program for up to 15 hours per week. Fellowships must be matched by the applicant by at least 30% of the <u>TOTAL project cost</u>. For \$15,000 in Federal funds, the required match is \$6,430. Availability of fellowships is contingent upon funding. Applications must be postmarked no later than November 29, 1996.

### ELIGIBILITY

Students admitted to or enrolled in a full-time Master's or Doctoral program at U.S. accredited colleges and universities are eligible to apply Students should have completed a majority of their course work at the beginning of their fellowship, and have an approved thesis research program. Recipients are subject to all Federal laws and Federal and Department of Commerce policies, regulations, and procedures applicable to Federal financial assistance awards.

Application Package & Additional Information



Dr. Dwight D. Trueblood Science Coordinator NOAA/Sanctuaries & Reserves Division 1305 East-West Highway, 12<sup>th</sup> Floor Silver Spring, MD 20910 301-713-3145 ext. 174 dtrueblood@ocean.nos.noaa.gov

NERR Research Contacts Alabama: Weeks Bay NERR, (334) 928-9792. California: Elkhorn Slough NERR, (408) 728-2822 • Tijuana River NERR, (619) 575-3613. Delaware: Delaware NERR, (302) 739-3493. Florida: Apalachicola Bay NERR, (904) 653-8063 • Rookery Bay NERR, (813) 775-8845. Georgia: Sapelo Island NERR, (912) 264-7218. Maine: Wells NERR, (207) 646-1555. Maryland: Chesapeake Bay NERR in Maryland, (410) 228-9250. Massachusetts: Waquoit Bay NERR, (508) 457-0495. New Hampshire: Great Bay NERR, (603) 868-1095. New York: Hudson River NERR, (914) 758-5193. North Carolina: North Carolina NERR, (910) 395-3905. Ohio: Old Woman Creek NERR, (419) 433-4601. Oregon: South Slough NERR, (541) 888-5558. Puerto Rico: Jobos Bay NERR, (809) 853-4617. Rhode Island: Narragansett Bay NERR, (401) 683-5061, South Carolina: Ashepoo-Combahee-Edisto Basin NERR, (803) 736-5050 • North Inlet-Winyah Bay NERR, (803) 546-3623. Virginia: Chesapeake Bay NERR in Virginia, (804) 642-7135. Washington: Padilla Bay NERR, (360) 428-1558.



## **Tenure Track Positions in Cell Biology**

The Departments of Cell and Developmental Biology invites appplications for three tenure track faculty positions at the assistant professor level. Applicants should have a research program in fundamental mechanisms of cellular function, including areas of research such as cell cycle control, cell motility, signaling and transport, and cell polarity. Please send curriculum vitae, summary of research accomplishments, future research plans, and three letters of reference to:



Dr. Charles P. Emerson, Jr. Chair, Department of Cell and **Developmental Biology** University of Pennsylvania School of Medicine Philadelphia, PA 19104-6058

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### CORNELL UNIVERSITY GRADUATE SCHOOL OF MEDICAL SCIENCES Graduate Study Toward the Ph.D. or



M.D.-Ph.D Degree in the Biomedical Sciences

The Cornell University Graduate School of Medical Sciences, composed of faculty drawn from Cornell University Medical College and the Sloan-Kettering Institute for Cancer Research, provides opportunities for graduate study leading to the Ph.D. or combined M.D.-Ph.D. degree in various fields of biomedical sciences. Programs of study include biochemistry and structural biology; cell biology and genetics; immunology; molecular biology; neuroscience; pharmacology; and physiology and biophysics. Special funding is available for interdisciplinary training in molecular medicine.

Successful applicants will be awarded full graduate fellowships covering living expenses and tuition. Subsidized university housing is available for all students, and the student health plan provides ambulatory care and hospitalization for all registered students.

The Cornell University Graduate School of Medical Sciences is part of the New York City Campus of Cornell University at Ithaca, New York. It is a component of a large biomedical research complex extending along York Avenue on Manhattan's East Side, including Cornell University Medical College, The New York Hospital, Memorial Sloan-Kettering Cancer Center, The Hospital for Special Surgery, and Rockefeller University. These institutions constitute one of the world's outstanding centers for biomedical research and education, as well as for medical diagnosis and treatment.

The Cornell University Graduate School of Medical Sciences is committed to the successful recruitment and training of qualified women and members of under-represented minority groups, including, but not limited to, African Americans, Alaskan Natives, American Indians, Hispanic Americans, and Pacific Islanders.

Cornell University is an Equal Opportunity/Affirmative Action Employer. To receive additional information and an application kit, call or write to: **Cornell University Graduate School of Medical Sciences** 

445 East 69th Street, New York, NY 10021 tel: 212-746-6565; fax: 212-746-8906

### FACULTY POSITION MATERIALS CHEMISTRY

The Department of Chemistry at Washington University in St. Louis invites applications for a **TENURE**-**TRACK FACULTY** position to begin in September 1997. We seek candidates having research interests in materials chemistry, but the area of subdisciplinary specialization is not otherwise specified. Participation in the teaching of core chemistry courses at both the undergraduate and graduate levels will be required. Candidates will be considered at all levels. Applications should be received by 1 November 1996 and should consist of a curriculum vitae and a concise, specific statement of research plans. Candidates should arrange for three letters of reference to be sent by the same date. Address all materials to: Faculty Search Committee, Department of Chemistry, Campus Box 1134, Washington University, One Brookings Drive, St. Louis, MO 63130-4899. Washington University is an Equal Opportunity/Affirmative Action Employer. Individuals from underepresented groups are especially encouraged to apply.

### AQUATIC ECOLOGIST

The Department of Zoology at North Carolina State University seeks applicants for a 12-month, **TENURE**-**TRACK FACULTY** position to work primarily at community or higher levels of organization, and augment departmental strengths in fisheries and ecology. The successful candidate will contribute 70 percent of efforts to undergraduate and graduate teaching and advising programs, including teaching an advanced undergraduate fisheries science course and a graduate course in his or her specialty, and 30 percent to development of a strong, externally funded research program

externally funded research program. To apply, send a letter of application, three letters of recommendation, a curriculum vitae, and statements of teaching and research interests to: Dr. Jim Rice, Aquatic Ecologist Search, Department of Zoology, North Carolina State University, Box 7617, Raleigh, NC 27695-7617. Applications will be accepted until November 15, 1996 or until a suitable candidate is identified. We encourage minorities, women, and disabled persons to apply. North Carolina State University is an Equal Opportunity/Affirmative Action Employer.

### ASSISTANT PROFESSOR

Applications are invited for a TENURE-TRACK assistant professorship in the Department of Biochemistry and Biophysics, Iowa State University (ISU), to begin fall 1997. Duties include teaching undergraduate and gradprogram. Research interests and teaching competence should emphasize molecular biophysics or physical bio-chemistry. Qualifications include a Ph.D. degree, postdoctoral experience, and a record of excellence and productivity in scholarly work. The Department has particular need for a person with expertise in NMR spectroscopy, although all candidates with strong qualifications in biophysical areas will be considered. Résumé and three letters of reference should be sent to: Professor Jon Applequist, Chair, Faculty Search Committee, 1210 Molecular Biology Building, Iowa State University, Ames, IA 50011. For further information see http://mole-bio.iastate.edu/bbhtml/homepage.htm. Applications will be accepted through November 30, 1996. *ISU is an* Affirmative Action/Equal Opportunity Employer.

**BIOPSYCHOLOGIST**—A tenure-track position will be available August 1997. The successful applicant will participate in the development and implementation of our new interdisciplinary neuroscience program, funded by the Howard Hughes Medical Institute. Teaching duties include a team-taught neuroscience course and lab, participation in a two-semester statistics and research methods course, participation in introductory psychology, a junior seminar in some aspect of biopsychology, and directing student research projects. While this is primarily a teaching position, development of an active research program involving undergraduates is expected. Excellent research and teaching facilities are available, as are start-up funds. We seek an individual with demonstrated excellence in teaching and research and a commitment to lib-eral arts education. Send curriculum vitae, statements of teaching and research interests, and three letters of rec-ommendation to: Dr. Jeffrey Cross, Psychology Department, Allegheny College, Meadville, PA 16335. Screening of applicants will begin October 15, 1996. Women and minorities are strongly encouraged to apply. Allegheny is an Equal Opportunity Employer.

### ASSISTANT PROFESSOR OF BIOCHEMISTRY BRANDEIS UNIVERSITY

The Department of Biochemistry invites applications for a full-time, **TENURE-TRACK POSITION**, preferably in the area of bio-organic reaction mechanisms. The candidate should have a doctoral degree in a relevant discipline and at least two years of postdoctoral research experience. Additional requirements are: a strong record of research accomplishments, commitment to developing an indepen-dent, creative research program, and skill in teaching bio-chemistry curricula at both graduate and undergraduate levels. Please send a curriculum vitae along with a succinct narrative statement of research accomplishments, interests, and future plans. Candidates should also arrange to have three letters of reference submitted. Please send applications and correspondence to: Ms. Maureen Ferrari, Faculty Search Coordinator, Department of Biochemistry, Mailstop 013, Brandeis University, Waltham, MA 02254-9110. Deadline for applications is November 15, 1996. Appointment commences September 1, 1997. Brandeis University is an Equal Opportunity / Affirmative Action Employer. Applications from qualified women and minorities are encouraged.

ASSISTANT PROFESSOR in Behavioral/Cognitive Neuroscience. The Department of Brain and Cognitive Sciences in the University of Rochester has available a tenure-track position. We seek scientists working within the broad domain of brain and behavioral plasticity. Especially encouraged to apply are those employing a cellular and/or systems approach to investigate mechanisms of plasticity during development, or learning and memory. The successful candidate will join a department whose focus is the study of development, cognition, and perception through combined neurobiological, computational, and behavioral research. The new faculty will also be part of a university-wide neuroscience community engaged in graduate and undergraduate education. Applicants can learn about the department at http://broca.bcs.roches ter.edu/bcs/. Applicants should submit a curriculum vitae, a brief statement of research interests, and three reference letters to: Search Committee Chair, Department of Brain and Cognitive Sciences, University of Rochester, Rochester, NY 14627. Application deadline is January 1, 1997. Affirmative Action/Equal Opportunity Employer.

FACULTY POSITION: The Salt Lake Geriatric Reearch, Education, and Clinical Center (GRECC) and the University of Utah School of Medicine are seeking applicants to join our ongoing research program in the Basic Biology of Aging. Candidates must have a Ph.D. and/or M.D. with at least two years of postdoctoral training and research experience in the effects of aging on the endocrine, immune, or nervous system. Full-time appointment will be made in the GRECC and the Department of Internal Medicine. Faculty rank is dependent upon qual-ifications of the applicant. Salt Lake City is well situated for a variety of outdoor activities, offers low-cost living expenses, and possesses a rich and diverse array of cultural opportunities including theater, a major symphony orchestra, opera, chamber music, and musical theater. Send curriculum vitae and bibliography to: HRMD (05C), Attn Pruett, VA Medical Center, Salt Lake City, UT 84148. Call GRECC, 801-584-2522 for more information. Recruitment is ongoing until a suitable candidate is identified. Affirmative Action/Equal Opportunity Employers.

### STAFF ASSOCIATE

Position available immediately to study the molecular mechanism of human allograft rejection. Applicants should have a Ph.D., two years of experience, and expertise in T cell cloning and molecular immunology to identify T cell epitopes of HLA molecules. Send curriculum vitae and names of three references to: Dr. Nicole Suciu-Foca, Columbia University, Department of Pathology, 630 West 168 Street, New York, NY 10032. FAX: 212-305-3429. Columbia University is an Equal Opportunity/Affirmative Action Employer.

Immediate opening at ASSISTANT or ASSO-CIATE PROFESSOR level for cellular and molecular immunologist with extensive experience in EAE. Please send curriculum vitae to: Oregon Health Sciences University, Neuroimmunology 151-D, Portland VAMC, 3710 SW U.S. Veterans Hospital Road, Portland, OR 97201. Oregon Health Sciences University is an Affirmative Action/Equal Opportunity Employer.

### POSITIONS OPEN

### EVOLUTIONARY BEHAVIORAL ECOLOGY (Rank Open)

We are searching to fill **TWO POSITIONS**, one senior and one junior, in evolutionary behavioral ecology. We are particularly looking for candidates with strong field and/or laboratory components to their research. Specific research areas and taxa are open and can include behavioral mechanisms in evolutionary genetic context. The ideal candidates will interact closely with a faculty with strong quantitative and theoretical interests and will be expected to maintain vigorous research programs, obtain extramural funding, train graduate students, and participate in undergraduate teaching. To apply, please send curriculum vitae, a statement of

To apply, please send curriculum vitae, a statement of research interests, and reprints, and have three letters of recommendation forwarded by November 7, 1996, to: Animal Behavior Search Committee, Department of Ecology and Evolution, University of Chicago, 1101 East 57th Street, Chicago, IL 60637.

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

NEUROBIOLOGIST—A tenure-track position will be available August 1997. The successful applicant will participate in the development and implementation of our new interdisciplinary neuroscience program, funded by the Howard Hughes Medical Institute. Teaching duties include a team-taught neuroscience course and lab, participation in two introductory biology courses, an upperlevel course in animal physiology, a junior seminar in some aspect of neurobiology, and directing student research projects. While this is primarily a teaching position, development of an active research program involving undergraduates is expected. Excellent research and teaching facilities are available, as are start-up funds. We seek an individual with demonstrated excellence in teaching and research and a commitment to liberal arts education. Send curriculum vitae, statements of teaching and research interests, and three letters of reference to: Dr. Lee Coates, Biology Department, Allegheny College, Meadville, PA 16335. Screening of applications will begin October 15, 1996. Women and minorities are strongly encouraged to apply. Allegheny is an Equal Opportunity Employer.

### FACULTY POSITION

The Division of Medicinal Chemistry and Natural Products, School of Pharmacy at The University of North Carolina at Chapel Hill, invites applications for a tenuretrack position at the ASSISTANT/ASSOCIATE PRO-FESSOR level. Applicants must have a Ph.D. degree and a demonstrated record of achievement in research.

Expertise in modern methods of drug design is desirable, including macromolecular structure characterization and structure-based drug design, combinatorial chemistry, and molecular biology. Strong applicants in all areas related to medicinal chemistry will be considered. Candidates will be expected to demonstrate their ability to develop a vigorous, independent research program and must have a strong commitment to undergraduate and graduate teaching. The position affords excellent opportunities for collaborative research with institutions in the Research Triangle Park area.

Newly renovated laboratory space and a start-up package commensurate with experience will be available. The search will remain open until the position is filled. Interested individuals should submit curriculum vitae, a threeto four-page description of current and future research/ teaching interests, and four letters of recommendation to:

Alexander Tropsha, Ph.D. Chairman, Search Committee Division of Medicinal Chemistry and Natural Products School of Pharmacy Beard Hall, CB Number 7360 The University of North Carolina at Chapel Hill Chapel Hill, NC 27599-7360

The University of North Carolina at Chapel Hill is an Equal Opportunity/ADA Employer. Female and minority applicants are encouraged to apply.

SCIENTIFIC WRITER (full-time)—working knowledge of organic chemistry and biochemistry needed. M.S. or Ph.D. in chemistry, biology, or pharmacology preferred. The individual will be asked to help prepare reports, grant applications, patents, manuscripts, etc. Send résumé and writing samples to: R. J. Bergeron, Department of Medicinal Chemistry, P.O. Box 100485, Gainesville, FL 32610-0485. FAX: 352-392-8406. No telephone calls please.

### **CDR Therapeutics**

### Seattle, Washington

CDR Therapeutics is a new biotechnology company that is devoted to developing small molecular analogs of proteins for therapeutic applications in immunology and oncology. The company is seeking highly motivated scientists with an outstanding record of scientific innovation for the following positions.

**Ph.D., Immunology** or related field with 5+ years of experience in research and development of immunosuppressive drugs.

**Ph.D., Chemistry** or related field with 5+ years of experience in the synthesis, purification, and characterization of peptides.

**Ph.D.**, **Biology** or related field with 3+ years of experience in the *in vitro* and *in vivo* study of cancer therapeutics.

Interested applicants are requested to send a C.V. to:

Human Resources CDR Therapeutics P.O. Box 19497 Seattle, WA 98109

## COLBY COLLEGE CLARE BOOTHE LUCE ASSISTANT PROFESSORSHIPS AT COLBY COLLEGE

Colby intends to appoint up to two Clare Boothe Luce Assistant Professorships for women in the sciences, beginning September 1997. Each of the following positions is to be filled by a tenure-track appointment. The Clare Boothe Luce Professorship continues through the first five years of appointment and brings with it a research fund as well as funds for student research assistants during the academic year and the summer. To apply, or for more information about these positions, please contact:

### BIOLOGY / NEUROBIOLOGY Paul G. Greenwood, (207) 872-3322

(pggreenw@colby.edu) 11/4/96

CHEMISTRY / ORGANIC AND COMPUTATIONAL CHEMISTRY Bradford Mundy, (207) 872-3317 (bpmundy@colby.edu) 12/1/96

**SEOLOGY/INVERTEBRATE PALEONTOLOGY** Robert E. Nelson, (207) 872-3247 (renelson@colby.edu) 1/1/97

**COMPUTER SCIENCE/SYSTEMS** Batya Friedman, (207) 872-3572 (b\_friedm@colby.edu) 2/1/97

MATHEMATICS / STATISTICS Homer Hayslett, (207) 872-3254 (hthaysle@colby.edu) 12/1/96

For more information about the College, please see: http://www.colby.edu. Colby is an AA/EO employer and encourages applications from women and minority candidates.

<u>Please note: the date indicates when the review of applications begins.</u>

## *Growing in* Canada. Reaching out to the Work

In just over 22 years, Apotex Inc. has grown to be the largest Canadian-owned pharmaceutical company, with over 2,000 employees. Committed to investing in we have expanded our facilities and branched out into the fields of biotechnology development. In this area, we are now seeking a dedicated professional to contribute to - and share - our growth.

## Drug Development Specialist

This is a challenging role with broad responsibility including evaluation of new projects and direct participation in project plan development and execution. Reporting to the Director, Innovative Drug Development, you will conduct scientific/business

literature and patent searches, and prepare reports with recommendations on project proposals. You will also assist in establishing product development plans, strategies, costs and scheduling, and in identifying and contracting R&D organizations to conduct specific work.

Your credentials include either a PhD in the Medical Sciences (i.e. Biochemistry, Pharmacology, etc.), or an MSc. plus 2 years of industrial experience. As a result, you will bring to this role advanced scientific and analytical skills coupled with general and technical knowledge of medical and pharmaceutical sciences. Strong oral and written communication skills are also important to liaise effectively with staff and external contacts.

Apotex is based in Toronto and offers a competitive salary and an excellent benefits package. Please forward your resume, principals only, with our assurance of discretion, to: Employment Specialist, Apotex Inc., 150 Signet Drive, Weston, Ontario, Canada, M9L 1T9. Fax: (416) 749-5590. No phone calls, please. Only candidates under consideration will be contacted.

Only candidates under consideration will be contacted. We are an equal opportunity employer and offer a smoke-free environment.



### UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER

### ASSISTANT/ASSOCIATE PROFESSOR (TENURE TRACK)

The Ryburn Cardiovascular Center invites applications from Ph.D. and/or M.D. investigators with demonstrated potential for innovative research in fundamental science or applied biotechnology broadly relevant to cardiovascular disease. Candidates with outstanding backgrounds in studies of gene transcription, DNA replication, developmental biology, mitochondrial genetics, vascular biology, or human genetics are particularly encouraged. Opportunities for teaching medical/graduate students and joint affiliations with other programs within our institution are available.

Current faculty and research themes of the Ryburn Center include: SA Johnston (gene transcription/biotechnology development); RG Victor (autonomic neurobiology); R Bassel-Duby (muscle development); IJ Benjamin (heat shock proteins); R Meidell (gene transfer/lipoprotein metabolism); RS Williams (muscle development/mitochondrial genetics). Other faculty closely linked to our Center through shared grants and core facilities include: EN Olson (muscle development); M Yanagisawa (endothelins); R Butow (mitochondrial genetics); J Stull (muscle biology); C Newgard (diabetes/metabolism). Additional information is available at http://www.swmed.edu/home\_pages/Cardiology/index.html.

Applicants should submit a curriculum vitae, bibliography, three letters of recommendation, and a brief description of research interests to:

Dr. R. Sanders Williams The University of Texas Southwestern Medical Center 6000 Harry Hines Blvd., NB11.200 Dallas, TX 75235-8573

UT Southwestern Medical Center is an equal opportunity/affirmative action employer.

### FACULTY POSITION VERTEBRATE GENETICS The Department of Physiology, UCSF

Applications are invited for a faculty position in vertebrate genetics and its application in mammalian physiology and disease. Preference will be given to candidates at AS-SISTANT PROFESSOR (tenure-track) level, although all levels will be considered. Ideal candidates will use genetics to investigate physiological questions at the level of cells, organs, or systems. The successful candidate will play a role in the Biomedical Sciences Graduate Program and may also participate in a new Human Genetics Program, the PIBS Graduate Program in Genetics, and/or a new UCSF Cancer Center. Significant research accomplishments, ability to maintain a rigorous research program, and commitment to excellence in education are required.

Please submit a letter of interest with curriculum vitae, summary of current and proposed research work, and key publications or preprints, and arrange to have at least three letters of recommendation sent to:

### Vertebrate Geneticist Search Attention: D. Blumer Department of Physiology, Box 0444 513 Parnassus Avenue, Room S-762 University of California San Francisco, CA 94143-0444

All materials should arrive by December 15, 1996 to ensure full consideration. University of California, San Francisco is an Equal Opportunity/Affirmative Action Employer.

#### BIOCHEMIST/MOLECULAR BIOLOGIST DEPARTMENT OF BIOLOGICAL SCIENCES STANFORD UNIVERSITY

We invite applications for a tenure-track position at the ASSISTANT PROFESSOR level (or TENURED AS-SOCIATE/FULL PROFESSOR level) from candidates working in the broad area of functional aspects of the interactions of proteins with nucleic acids in key cellular processes. Please submit a curriculum vitae, FAX number, Email address, description of current and future research interests, and statement of teaching experience and goals to: Professor Philip C. Hanawalt, Department of Biological Sciences, Stanford University, Stanford, CA 94350-5020 U.S.A. The application deadline is November 1, 1996. Please provide the names, addresses, Email, FAX and telephone numbers of three referees, but do not ask them to send a letter of recommendation. Applications from women and members of minority groups are strongly encouraged.

### TENURE-TRACK FACULTY POSITION Department of Microbiology and Immunology SUNY Health Science Center at Syracuse

The Department of Microbiology and Immunology at plications for a tenure-track, full-time position at the AS-SISTANT PROFESSOR level. Competitive applicants will have a Ph.D. degree or accurate the SUNY Health Science Center at Syracuse invites will have a Ph.D. degree or equivalent, postdoctoral expe-rience, and a record of innovative research productivity. Salary, space, and start-up funds are competitive with national levels. Applications including a statement of research interests and goals; a curriculum vitae; and names, addresses, and telephone numbers for three references should be sent to: Steven M. Taffet, Ph.D., Chair of the Search Committee, Department of Microbiology and Immunology, SUNY Health Science Center at Syra Cuse, 750 East Adams Avenue, Syracuse, NY 13210. The deadline for applications is November 1, 1996. The SUNY Health Science Center at Syracuse is an Equal Opportunity/Affinnative Action Employer.

### FACULTY POSITIONS Immunology of Vaccination

The newly established Emory Vaccine Research Center and the Department of Microbiology and Immunology, Emory University School of Medicine, are seeking appli cations from cellular and molecular immunologists with strong research credentials and an interest in vaccine research and development. The Vaccine Center will be housed in a new 25,000-square-foot building containing state-of-the-art core facilities including BSL-3 laboratory and vivarium space. Applicants should send their curriculum vitae, a statement of research interests and plans, and the names of three references to: Dr. Rafi Ahmed, Director, Emory Vaccine Research Center, G211 Rollins Research Center, Atlanta, GA 30322. Emory University is an Equal Employment Opportunity/Affirmative Action Employer.

### POSITIONS OPEN



### HARVARD MEDICAL SCHOOL Department of Pathology

The Department of Pathology at Harvard Medical School seeks well-qualified (Ph.D., M.D./Ph.D., or M.D.) applicants for a tenure-track position at the AS-SISTANT or ASSOCIATE PROFESSOR level with research interests in the area of cancer biology

As part of an expansion of a basic research program in Cancer Biology, the Pathology Department is recruiting an outstanding candidate who has completed three to five years of relevant postdoctoral or independent research, and who has the capability of directing a rigorous independent research program in an area relevant to cancer biology such as cell cycle control, viral oncology, cancer genetics, tumor suppressor genes, or signal transduction.

Candidates are expected to participate in the teaching activities of the Department for medical students, gradu ate students, and postdoctoral fellows. Recently renovated laboratory research space and an attractive start-up support package are available for this position. Applicants should send their curriculum vitae, a statement of research interests, and the names of three references to: Dr. Peter M. Howley, Department of Pathology, Harvard Medical School, Building D2, 6th Floor, 200 Long-wood Avenue, Boston, MA 02115. Harvard Medical School is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

### COMPARATIVE BIOLOGIST UNIVERSITY OF SOUTH CAROLINA

The Department of Biological Sciences invites applications for a comparative biologist working in physiology, sensory biology, biomechanics, or fluid dynamics. This faculty posi-tion is TENURE-TRACK and rank is open depending upon the qualifications of the candidate. The successful candidate will be expected to establish an active, externally funded research program and participate in graduate and undergraduate instruction. A Ph.D. and postdoctoral experience are required. Information on the Department and its facilities is available at: http://zebra.biol-.sc.edu/biology. Review of files will begin October 30, 1996. Interested individuals should send their curriculum vitae; a description of research and teaching interests; and the names, addresses, Email addresses, and telephone numbers of three references to: Dr. Jerry Hilbish, Comparative Biology Search, Department of Biological Sci-University of South Carolina, Columbia, ences, SC 29208. The University of South Carolina is an Equal Opportunity/Affirmative Action Employer.

### EASTERN CONNECTICUT STATE UNIVERSITY

Eastern Connecticut State University is currently searching for a qualified individual to serve as a tenure track ASSISTANT PROFESSOR-Cell Biology/Biochemistry. Duties include teaching introductory and advanced courses to majors and non-majors, academic advising, professional development, and working with the Physical Sciences Department to establish a biochemistry program. Information about the department can be found at http://biology.ecsu.ctstateu.edu. Qualifications: Qualifications include Ph.D. and post-

doctoral training; expertise in plant, fungal, or insect systems an advantage. Demonstrated interest in undergraduate teaching essential.

Screening of completed applications will begin imme-diately and close December 1, 1996. Please send curriculum vitae and the names of three references to:

> Dr. Charles Booth Cell Biology/Biochemistry Biology Search Chair, Biology Department 83 Windham Street Eastern Connecticut State University Willimantic, CT 06226

Eastern Connecticut State University is an Affirmative Action/ Equal Employment Opportunity Employer and is aggressively recruiting female and minority applicants in a effort to bring greater diversity to its work force and community.

### POSITIONS OPEN

### ECOLOGIST

Tenure-track ASSISTANT PROFESSOR position to begin 16 August 1997. Plant and animal ecologists with strength in quantitative biology are encouraged to apply. Establishment of a productive, independent research program and direction of graduate students is expected. Will instruct a core undergraduate course in ecology and participate in a team-taught introductory biology course. An additional upper-level undergraduate or graduate course in quantitative biology will be expected in the future. Ph.D. required and postdoctoral experience desirable. For more information about our department consult our web page at: http://sage.und.nodak.edu/dept/biology/jobs.html. Send curriculum vitae, list of relevant coursework, three representative reprints, and statements of teaching and research interests, and have three letters of recommendation sent to: Chair, Ecology Search Committee, University of North Dakota, Grand Forks, ND 58202-9019. Review of applications will begin on November 25, 1996 and continue until the position is filled. The University of North Dakota is an Affirmative Action/Equal Opportunity Employer.

### THE UNIVERSITY OF TEXAS-HOUSTON MEDICAL SCHOOL

Faculty position in Neuroscience: The Department of Neurobiology and Anatomy, University of Texas-Hous-ton, invites applicants for a **TENURE-TRACK** faculty position. A strong research background in vertebrate systems neurobiology with specific research experience in learning and memory or neuronal plasticity is required. Applicants must hold a Ph.D. or M.D. degree and have at least two years of postdoctoral training. A successful candidate will be expected to develop a strong independent research program and teach at the medical and graduate school levels. Rank of appointment will be based on qualifications. Applicants should submit a curriculum vitae, a brief description of research interests, and the names and addresses of three references to:

Dr. Terry Crow Chairman, Neuroscience Search Committee Department of Neurobiology and Anatomy University of Texas-Houston

P.Ó. Box 20708 Houston, TX 77225.

The University of Texas-Houston is an Equal Opportunity Employer/smoke-free environment. Women and minorities are encouraged to apply.

RESEARCH ASSISTANT PROFESSOR, Department of Surgery, University of Kansas Medical Center, Kansas City, Kansas. Position available immediately to work on studies concerning the regulation of the gastrointestinal microcirculation under both normal and pathophysiological conditions. Major areas are 1) Role of en-. dothelial-derived factors in microvascular injury following ischemia/reperfusion, and 2) Mechanisms involved in inflammatory mediatory-induced microvascular dysfunction during sepsis/multiple organ failure. Applicants should have a strong interest in microvascular research and training in cardiovascular, molecular biology, inflam-mation, or a related field. Salary negotiable based on prior experience and training. Send curriculum vitae, personal statement, and names of three references to: Laurence Y. Cheung, M.D., Department of Surgery, University of Kansas Medical Center, 3901 Rainbow Boulevard, Kansas City, KS 66160. The University of Kansas Medical Center is an Equal Opportunity/Affirmative Action Employer/ Educational Institution.

### UNIVERSITY OF PENNSYLVANIA MEDICAL SCHOOL Department of Pharmacology

Faculty are being recruited for a new program in vascular biology in the Department of Pharmacology. Faculty positions are available in the tenure and research tracks ASSISTANT, ASSOCIATE, or FULL PROFES-SOR levels and include start-up funds. Applicants should have postdoctoral experience and the ability to develop a strong extramurally funded research program. Applications, including a curriculum vitae, selected reprints or preprints, a statement of research interests, and the names and addresses of three references, should be sent to: Dr. Garret A. FitzGerald, Vascular Biology Search, Department of Pharmacology, Medical School of the University of Pennsylvania, Philadelphia, PA 19104-6084. Women and minorities are especially encouraged to apply. The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer.

## **COLLEGE OF PHYSICIANS AND SURGEONS COLUMBIA UNIVERSITY GENOME SCIENTIST AND GENE MAPPERS**

The Columbia Genome Center and the Molecular Genetics Laboratory are recruiting a Genome Scientist and two Human Disease Gene Mappers to join an active, multidisciplinary group funded to conduct large-scale genetic and physical mapping, DNA sequencing, gene identification, and bio-informatics, aimed at mapping and identifying complex disease genes in humans. An Associate Research Scientist is needed to direct the newly constructed, high-throughput genotyping unit. The goal of this project is to provide highquality, cost-effective, automated genotyping to map genes for neuro-psychiatric and other complex human disorders. The successful candidate should have a doctoral degree and postdoctoral experience with documented productivity in human disease gene mapping or implementation of automated technologies. Two Postdoctoral Research Scientists are sought to head individual gene-mapping projects. One will direct a project to map predisposition loci for bipolar affective disorder. The project (in collaboration with Dr. Miron Baron) includes an outstanding clinical sample---the largest reported to date, with sufficient statistical power to detect gene effects under various models relevant to this disorder-and resources for large-scale mapping and cloning. Experience in linkage analysis, use of genetic analysis software packages, automated genotyping, or mapping complex disease loci would be particularly useful. A second fellow is sought to direct the physical mapping and cloning of a juvenile-onset glaucoma gene, and the search for genes predisposing to late-onset glaucoma. The candidate should show demonstrable expertise in genetic mapping and positional cloning.

Send curriculum vitae, including bibliography, statement of research interests, and names of three references, to: Dr. T. Conrad Gilliam, Director, Molecular Genetics Laboratory; 722 West 168th St., Unit 23; New York, NY 10032. Email: tcgl@columbia.edu.

Columbia University is an affirmative action/equal opportunity employer.

### ANNOUNCEMENT

## Harvey Mudd College

is proud to honor **Computational Neurobiologist** 

## TERRENCE J. SEINOWSKI, PH.D.

**1996 Recipient of the Wright Prize** 

for excellence in interdisciplinary research in science and engineering

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Dr. Sejnowski's distinguished lecture: "THE CENTURY OF THE BRAIN" 7. P.M. Friday, October 25, 1996 Galileo Hall

### Harvey Mudd College 301 E. Twelfth Street Claremont, California (909) 624-4146 college\_relations@hmc.edu

Free and open to the public

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Pharmaceutical Division

Bayer Corporation., Pharmaceutical Division, located near Raleigh, NC, is expanding the Process Technology Group to meet the needs of our expanding Biological Products business. We have the following position available:

## PROCESS ENGINEERING SCIENTIST. SECTION HEAD

Position #96-14: This position will form and lead this group which will contribute to the development of new purification processes for plasma proteins. We require a PhD/MS in Chemical Engineering with a minimum of 6 years of relevant experience in the pharmaceutical or biotechnology industry. Previous leadership and supervisory experience is required. Experience in process optimization and scale-up of unit operation such as chromatography, membrane separation, and filtration is required. Candidates should be familiar with GLP/GMP regulations. This position will interface with the site Project Engineering group and play a major role in the development and realization of new protein purification processes.

Bayer Corp. offers an excellent compensation package commensurate with qualifications. Send resume with position number clearly identified to: Human Resources Manager, Bayer Corp., P.O. Box 507, Clayton, NC 27520.

An Equal Opportunity Employer M/F/D/V

## BIOLOGY

Hillsdale College has the following two tenure track positions available in their Biology Department:

### **Developmental Biologist/Geneticist**

Assistant Professor of Biology, tenure track position opens Spring 1997. Requires teaching Genetics and Developmental Biology and the maintenance of a mouse colony.

### Human Gross Anatomist/Histologist

Assistant Professor of Biology, tenure track position opens Fall 1997. Requires teaching Human Gross Anatomy laboratories, two semesters of Human Anatomy and Physiology, and Histology.

Both positions require team participation in a freshman science course, occasional seminar leadership, directing research leading to senior theses, and advising students.

A Ph.D. is required as is a firm commitment to enthusiastic teaching at a small liberal arts college. Send letter of application, three letters of reference, curriculum vitae, and a list of references by November 1, 1996 to Dr. Donald Toczek, Director, Biology Department, Hillsdale College, Hillsdale, Michigan 49242. (Files completed prior to November 1 may receive early interviews.)

Hillsdale College is an independent, traditional college of liberal arts and especially committed to the preservation and transmission of modern man's intellec-

tual and spiritual inheritance from the Judeo-Christian faith and Greco-Roman culture. EOE



### COMPUTATIONAL MOLECULAR BIOLOGY

The Department of Biology of Pomona College, a highly selective, national liberal arts college, invites appli-cations for a new, tenure-track ASSISTANT PROFES-SORSHIP to begin in fall 1997, funded by a grant from the Howard Hughes Medical Institute. Applicants should have broad training in biology with considerable training, including postdoctoral experience, in computational molecular biology in an area to include molecular modeling. The appointee will participate in Pomona's Molecular Biology Program and help integrate computational methods into the curriculum. The successful candidate will teach an upper-division lab course in computational molecular biology. He or she will also teach a lecture or seminar course in an area of specialty to be replaced by participation in one of the introductory lab courses in biology in the fourth year of the appointment. The appointee will establish an active research program involving undergraduates for which start-up funds are available. The successful candidate will demonstrate a commitment to teaching an ethnically diverse student body in a liberal arts and sciences setting. Send curriculum vitae, statement of research interests, statement of teaching philosophy and interests, and three letters of recommendation to: Computational Molecular Biology Search, Department of Biology, Pomona College, Claremont, CA 91711. Telephone: 909-607-2950. For full consideration, applications should be received by October 25, 1996 and will be accepted until the position is filled. Pontona College is an Affinnative Action/Equal Opportunity

Pontona College is an Affirmative Action/Equal Opportunity Employer. We strongly encourage applications from members of groups under-represented in the sciences.

### EVOLUTIONARY BIOLOGY Indiana University, Bloomington

The Department of Biology and the Program in Evolution, Ecology, and Behavior seek to recruit a new FAC-**ULTY** member at the junior or senior level in the broad area of evolutionary biology. Candidates' research should be integrative and should focus on questions in areas such as physiology, development, or population/quantitative genetics. The successful candidate should have demonstrated ability as a creative scientist and will be expected to conduct a vigorous, independent, externally funded research program and contribute to teaching at undergraduate and graduate levels. Junior candidates should send a curriculum vitae and brief description of research interests, and arrange to have three letters of reference sent to: Evolution Search Committee, Department of Biology, Indiana University, Bloomington, IN 47405-6801. Senior candidates should send a letter of interest and curriculum vitae.

Applications received before December 1, 1996 will be assured of full consideration. For more information about the department, see our home page: http://www. bio.indiana.cdu. Indiana University is an Affirmative Action/ Equal Opportunity Employer. Applications from women and minorities are strongly encouraged.

ASSISTANT/ASSOCIATE PROFESSOR of Biology with a research interest in science pedagogy. Begins fall 1997. In addition to a doctorate in biology, applicants should have a demonstrated ability or potential to effectively instruct undergraduate students of diverse cultures and backgrounds, to contribute to community outreach programs, and to develop a research program involving the instruction of undergraduate and graduate students. Consideration of applications will begin November 1, 1996; application deadline is December 31, 1996. Position is subject to final authorization. Visit http://www. csusm.edu/A\_S/Biology for more information. Send curriculum vitae, three letters of reference, and statements of teaching and research interests to: Biology Search Committee, Department of Biological Sciences, California State University, San Marcos, CA 92096. Affirmative Action/Equal Opportunity Employer/Title IX.

### PLANT SCIENTIST

NovaFlora, Inc., is an early stage plant biotechnology company pursuing the development of value-added ornamental plants. An immediate opening exists for a Ph.D. level plant scientist with expertise in plant tissue culture, post-harvest physiology, and/or germplasm and tissue preservation. Send curriculum vitae, names and telephone numbers of three references, and statement of research interests to: Dr. Michael S. Dobres, NovaFlora, Inc., University City Science Center, Suite 350, Philadelphia, PA 19104. FAX: 215-387-4311.

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### POSITIONS OPEN



#### SENIOR SCIENTIST/DIRECTOR OF TECHNOLOGY DEVELOPMENT

Access Pharmaceuticals, Inc. is seeking an experienced hands-on **SCIENTIST** to play a leading technical role in the design and characterization of novel polymer drug delivery technologies. This person will lead a team of scientists involved in technology development research, and will be responsible for building technical skills within the Technology Development function.

Candidates should have a Ph.D. in biochemistry or chemistry with at least three to five years of postdoctoral experience, and a proven track record of independence and scientific achievement. Previous experience in formulation and drug delivery would be a strong advantage, as would the ability to work within a multidisciplinary, teambased setting.

Access Pharmaceuticals, Inc. is a public company specializing in bioresponsive polymer systems that can direct pharmaceuticals to target tissues and sites of disease. Candidates from either academia or industry are encouraged to send curriculum vitaes to: Dr. Glynn Wilson, Access Pharmaceuticals, Inc., 2600 Stemmons Freeway, Suite 176, Dallas, TX 75207. FAX: 214-905-5101.

### INTERDISCIPLINARY POSITION

Hydrologist/Soil Scientist/Agricultural Engineer with the Southern Piedmont Conservation Research Center, Watkinsville, Georgia. The Agricultural Research Service is seeking candidates to contribute to interdisciplinary research on soil, plant, animal, and atmospheric systems. Mechanistic research will be conducted to improve understanding of movement of water and associated nutrients and chemicals through soils and across landscapes, and to elucidate impacts of topography, soil, and agronomic and animal management on water movement. Knowledge of controlling mechanisms and processes is applied to the design and testing of improved land management systems that fully utilize climate potential, sustain the soil resource, protect water quality, and provide an economic return to the landowner. Applicants must provide documentation of having a knowledge of surface and shallow subsurface hydrology and soil physics, skills in Geographic Information Systems, experience in hydro-logic and water management simulation, and knowledge of agricultural systems. U.S. citizenship is required. Ph.D. is desirable. Salary is commensurate with experience. (GS-11/12, \$36,426 to \$56,759). For information on the research position or program, contact: Jean L. Steiner, USDA-ARS, Southern Piedmont Conservation Research Center, 1420 Experiment Station Road, Watkinsville, GA 30677-2373. Telephone: 706-769-5631, ext. 203; Email: jsteiner@uga.cc.uga.edu. For information on application procedures/forms, contact: Karen M. Benedict, Telephone: 301-344-3955. Specific responses to qualifications requirements must be provided to be considered for this position. Applications should be marked with Announcement Number ARS-D6S-081. Applications must be postmarked by December 2, 1996. Mailing Address: USDA, Agricultural Research Service, HRD, Southern Operations Branch, 6305 Ivy Lane, Room 348, Greenbelt, MD 20770-1435, Attention: Karen M. Benedict. USDA is an Equal Opportunity Employer.

### SCIENTIST

The Department of Surgery is seeking candidates to direct a vascular biology research program studying the etiology of atherosclerosis and vein graft hyperplasia. The candidate should have knowledge of the role of leukocytes and their cytokines/receptors, as well as the functions of mural smooth muscle and endothelial cells. Knowledge in hemodynamics will also be valuable.

The qualified individual should have a Ph.D. or equivalent, at least two to four years of postdoctoral training, and an excellent publication record. Individual must be interested in working with M.D.'s in the development of clinically relevant investigatory approaches. This position is limited to three years, with extension

This position is limited to three years, with extension contingent on extramural funding. Send curriculum vitae; description of research goals; and the names, addresses, and telephone numbers of three references to: **Dr. John Hoch, Department of Surgery, University of Wiscon**sin, Clinical Science Center, H4/730, 600 Highland Avenue, Madison, WI 53792-7375.

### POSITIONS OPEN

### TWO BIOLOGY FACULTY POSITIONS Pomona College

The Department of Biology of Pomona College, a highly selective liberal arts college, is expanding and inwites applications for two tenure-track ASSISTANT PROFESSORSHIPS to begin in fall 1997. Applicants should have broad training in biology with considerable training in molecular biology, including postdoctoral experience. The appointees will also participate in Pomona's Molecular Biology Program. One appointee will teach an introductory lab course in genetics and an upper-level course, with lab, in molecular evolution. The second appointee will also teach an introductory lab course in genetics and an upper-level course, with lab, in developmental biology. We are particularly interested in candidates who can additionally contribute more broadly to our biology curriculum. The appointees will also establish active research programs involving undergraduates for which start-up funds are available. Each successful candidate will demonstrate a commitment to teaching an ethnically diverse student body in a liberal arts and sciences setting. Send curriculum vitae, statement of research interests, statement of teaching philosophy and interests, and three letters of recommendation to: Molecular Évolution Search or Developmental Biology Search, Department of Biology, Pomona College, Claremont, CA 91711. Telephone: 909-607-2950. For full consideration, applications should be received by October 25, 1996 and will be accepted until the positions are filled.

Pomona College is an Affirmative Action/Equal Opportunity Employer. We strongly encourage applications from members of groups under-represented in the sciences.

### CELLULAR MECHANICS BOSTON UNIVERSITY

The Boston University Biomedical Engineering Department is seeking a faculty member to enhance a growing **CELL MECHANICS** program. Persons experienced in cytoskeleton, molecular biology, modern imaging technologies, and techniques of micromanipulation and force measurement at the molecular or whole cell levels are particularly encouraged to apply. Preference will be given to applicants at the level of assistant professor (tenure-track). Candidates should send five copies of their curriculum vitae, one or two recent publications, and a short letter describing the significance of prior research and rationale of intended future research to: Dr. Micah Dembo, Chair Cell Mechanics Search Committee, Boston University, Department of Biomedical Engineering, 44 Cummington Street, 4th Floor, Boston, MA 02215, U.S.A. An Equal Opportunity Employer.

### FELLOW IN THEORETICAL NEUROBIOLOGY

The Neurosciences Institute is an independent, notfor-profit organization at the forefront of research on the brain. Located in La Jolla, the Institute is also the home of the Neurosciences Research Program and serves as an international meeting place for neuroscientists; Fellows have opportunities to interact with visitors from many institutions worldwide.

Applications are invited for positions as **JUNIOR** or **SENIOR FELLOW** in Theoretical Neurobiology. Since 1987, the Institute has had a research program dedicated to developing biologically based, experimentally testable theoretical models of neural systems. Current projects include large-scale simulations of neuronal networks, the design of behaving automata, and detailed formulations of biologically based models of perceptual systems. Junior Fellows, through collaborations with Senior Fellows and colleagues at the Institute, will have opportunities for advanced training in neural modeling and theoretical approaches to understanding brain function. Fellows in Theoretical Neurobiology will have daily opportunities to interact with Fellows in Experimental Neurobiology at the Institute.

Applicants should be at the postdoctoral (Junior Fellow) or assistant professor (Senior Fellow) level with strong backgrounds in experimental or theoretical neuroscience or related fields. Experience in computer modeling is especially welcome. Positions are available now.

Fellows will receive stipends appropriate to their qualifications and experience. Candidates should send a short statement of research interests, a curriculum vitae, and the names of three references to: Dr. W. Einar Gall, Research Director, The Neurosciences Institute, 10640 John Jay Hopkins Drive, San Diego, CA 92121.

# **Tenure-Track** Positions Assistant Professor Equivalent

### Signal Transduction in Allergic Inflammation

The laboratory of Allergic Diseases, NIAID, is seeking a tenure-track investigator to develop an independent research program related to the analysis of the biology of signal transduction in allergic inflammation. Candidates should have a PhD or MD and postdoctoral training in signal transduction. Space, technical and postdoctoral fellow support, supply budget, and salary are committed. Applicants must be U.S. citizens or permanent residents. Submit applications to Dr. John Kehrl, Chairperson, Tenure-Track Search Committee, (OE 119), NIAID, Building 10, Room 11B01, 10 CENTER DR MSC 1880, BETHESDA MD 20892-1880.

### Study of Liver Diseases

The Liver Diseases Section is located in the Warren Grant Magnuson Clinical Center with newly renovated laboratory space. Ongoing basic research activities focus on molecular pathogenesis of hepatitis B and C virus infections as well as on animal models of liver diseases. Active clinical investigations on various forms of liver diseases are also an integral part of the research activities of the Section. Applicants should have an MD or PhD degree, a special interest in liver diseases, a strong record of scientific accomplishments, and the ability to establish an independent research program. Candidates with strong background in immunology, molecular and cell biology, or gene therapy are encouraged to apply. Applications must be received by December 15, 1996. Liver Diseases Section, (OE-119), Division of Intramural Research, NIDDK, Building 10, Room 9B16, 10 CENTER DR MSC 1800, BETHESDA MD 20892-1800.

### Neurobiological Basis of Childhood Psychiatric Disorders

The Child Psychiatry Branch, NIMH, is seeking a tenure track investigator to conduct independent research on the neurobiological basis of childhood psychiatric disorders. Candidates should have a PhD and postdoctoral training in neuropsychology, developmental psychology, or cognitive neuroscience, or an MD degree with training in neurology, pediatrics, pediatric neurology, or child psychiatry, together with expertise in structural and/or functional brain imaging. Clinical populations currently under study in this Branch include children and adolescents with schizophrenia, attention deficit/hyperactivity disorder, and obsessive compulsive disorder. Deadline for applications is October 15, 1996. Chair, Child Psychiatry Branch Search Committee, (OE-119), NIMH, Building 10, Room 6N240, 10 CENTER DR MSC 1600, BETHESDA MD 20892-1600.

### To Apply

Please send a cover letter, curriculum vitae, bibliography, a one- to two- page statement of research interests and goals, and selected publications to the address listed with each position. In addition, please arrange to have letters of recommendation sent from three references who can provide an evaluation of your professional qualifications.



## National Institutes (

Office Of Education http://helix.nih.gov:8001/oe

The NIH is an Equal Opportunity Employer

Prize

## Solicitation for the Aleksander Jabloňski Prize

sponsored by the **Biological Fluorescence Subgroup** of the **Biophysical Society** and

## **Spectronic Instruments, Inc.**

The Prize will be awarded in alternate years to investigators nominated by their peers for outstanding fundamental accomplishments in the principles and applications of fluorescence spectroscopy as applied to biology. The awardee will receive a \$2500 cash prize and will present an award lecture on his/her research during the Annual Biophysical Society Meeting. The first award will be granted in February, 1997. The nominee will be selected by the Jabloňski Prize Committee consisting of: Maurice R. Eftink, University of Mississippi; Robert D. Fugate, Spectronic Instruments, Inc. (formerly SLM-AMINCO); Franklyn G. Prendergast, Mayo Clinic; J.B. Alexander Ross, Committee Chairperson, Mount Sinai School of Medicine; and Catherine A. Royer, University of Wisconsin. Nominations should be sent by November 30, 1996, to:

**Biological Fluorescence Subgroup of the Biophysical Society** Dr. Catherine A. Royer, President University of Wisconsin School of Pharmacy 425 N. Charter Street Madison, WI 53706 FAX (608) 262-3397

### Dean **College of Mathematical and Physical Sciences** The Ohio State University

The Ohio State University invites nominations and applications for the position of Dean of the College of Mathematical and Physical Sciences. The College has had a recent history of extraordinary success in developing innovative new directions for research and teaching. Departments have made impressive gains in recent National Research Council rankings. The University and State are supporting the College through extensive building and infrastructure developments. We seek an individual who will provide the creative intellectual leadership necessary to continue our drive towards preeminence.

Qualifications for the position include a distinguished scholarly record in research and teaching plus demonstrated leadership and administrative ability. Candidates must qualify for a tenured appointment as Professor in one of the Departments of the College. The University has an aggressive affirmative action program and seeks an individual with a strong commitment to this concept. The Dean is the Chief Executive Officer of the College and reports to the Provost of the University.

The College consists of six departments: Astronomy, Chemistry, Geological Sciences, Mathematics, Physics, and Statistics. In addition, there are a number of cross-disciplinary degree programs, research centers, and institutes. The College has a faculty of 240 and has an annual budget of \$70 million. The research infrastructure is enhanced by The Ohio Supercomputer Center, located on campus, providing access to various Cray computers for faculty, students, and staff.

The position will be available July 1, 1997. Salary and other considerations will be consistent with the University's commitment to recruiting the best qualified individual. To assure full consideration, applications and nominations should be received by November 1, 1996. The Search Committee will begin screening dossiers on that date and will continue to receive applications until the Dean is selected.

Applications and nominations should be addressed to: Chairperson, CMPS Dean Search Committee **Office of Academic Affairs** 203 Bricker Hall **190 North Oval Mall** 



Columbus, Ohio 43210 The Ohio State University is an Equal Opportunity, Affirmative Action Employer. Women, minorities, Vietnam-era veterans, disabled veterans, and individuals with disabilities are encouraged to apply.

### **GLOBAL CAREER OPPORTUNITIES**

## EDITOR **Radiation Effects Research Foundation HIROSHIMA AND NAGASAKI, JAPAN**

The U.S. National Academy of Sciences (NAS) is recruiting a science copy editor to work at the Radiation Effects Research Foundation (RERF) in Hiroshima, Japan. RERF is a Japan-U.S. foundation employing over 300 persons at laboratories in Hiroshima and Nagasaki. Its primary mission is to assess the long-term health effects of ionizing radiation in a large cohort of atomic bomb survivors and their children. Research includes studies in epidemiology, statistics, clinical studies, genetics, cytogenetics, cellular and molecular biology, immunology, and biochemistry, resulting in 25-40 reports annually drafted in English by U.S. and Japanese scientists.

We seek an individual to do the following:

- · Assist authors with drafts during manuscript peer review,
- · Edit biomedical manuscripts to meet style and format requirements of major scientific journals,
- Edit administrative and public relations documents, such as annual reports and brochures,
   Edit and produce an 8-16 page scientific newsletter three times per year,

· Web site coordination for design and development of bilingual site, write or edit English materials, oversee and execute production and maintenance processes

Requires at least five years of experience as a full-time production copy editor in health sciences or related field. Hands-on experience with publication production required. Necessary computer skills: word processing (Microsoft Word on IBM compatible personal computer), desktop publishing. HTML coding, and WWW site maintenance a plus. Ability to work under deadline pressure

Salary commensurate with qualifications and supplemented by relocation, cost-of-living, housing, and home leave benefits. Tuition provided for dependent children. Typical appointments are for two vears with extensions possible

Equal Opportunity Employer (EOE).

Resume and contact information for three references should be sent to one of the below:

E-mail: Fax: Postal mail: jzimbric@nas.edu 202-334-1639 National Research Council, BRER NAS 342 (CB) 2101 Constitution Avenue, NW Washington, DC 20418, USA

### Molecular/Cellular Endocrinologist University of California, Davis

The Division of Biological Sciences, University of California, Davis, invites applications for an Assistant Professor in the division's Section of Neurobiology, Physiology, and Behavior. This tenure-track position can include an initial appointment in the Agricultural Experiment Station. A Ph.D. (or equivalent) and postdoctoral experience is required. Candidates must have an out-standing record of research achievement with research interests directed to molecular/cellular analyses of contemporary problems in endocri-nology. The appointee will be expected to establish a strong research program in endocrinology; interact with Section faculty in at least one of the subdisciplines of physiology, neurobiology, and behavior; and participate fully in the teaching and advising programs coordinated by the Section, Division of Biological Sciences, and Graduate Studies. Although candidates in all areas of endocrinology will be considered, we are particularly interested in candidates with expertise in metabolic endocrinology, comparative endocrinology, or neuroendocrinology. Applications should in-clude (1) a curriculum vitae (with e-mail address), (2) a statement of current and proposed research interests, (3) three relevant reprints, (4) a statement of teaching experience and interests, and (5) the names, telephone numbers, and addresses (postal and e-mail) of at least three references. Candi-dates should also arrange to have their reference letters mailed directly to the committee chair. All materials should be sent to: Chair, Endocrinology Search Committee; Section of Neurobiology, Physiology, and Behavior; University of California, Davis, CA 95616-8519. Closing date: Open until filled, but all application materials must be received by November 22, 1996 to be assured full consideration. The University of California, Davis, is an affirmative action/equal opportunity employer with a strong institutional commitment to the development of a climate that supports equality of opportunity and respect for differences.

### MEETINGS

## MATHEMATICS AND **MOLECULAR BIOLOGY V**

**"STATISTICS AND INFERENCE IN MOLECULAR BIOLOGY**"

> Santa Fe, N.M. January 14-19, 1997

Limited travel funds available. Students have priority.

> Abstract deadline: December 1, 1996

For complete information:

University of California at Berkeley, Program in Math and Molecular **Biology**, 103 Donner Laboratory, #3206 Berkeley, CA 94720-3206 **Email:** sylviaj@violet.berkeley.edu You are looking at the future. The future in biomedical research, industrial and clinical diagnostics, and genomics. We are the creators of the GeneChip<sup>TM</sup> — a new revolutionary technology that is transforming how we acquire, analyze and manage genetic information. It's what we are working on at Affymetrix and it could just launch your career in a whole new exciting direction!

### STAFF SCIENTIST

We will rely on you to develop gene expression monitoring as well as general DNA sequencing methods using high-density oligonucleotide probe arrays. Additionally, you will develop methods of sample preparation, probe design and data analysis, and develop new applications of DNA probe arrays in areas such as sequencing, mapping, genetics, medical diagnostics and cell biology. The ideal candidate will pos-sess a Ph.D. in biophysics, biochemistry, genetics, molecular biology or related field, along with demonstrated experience with DNA/RNA and standard molecular biology procedures and concepts. Previous experience with the genetics of bacterial identification and antibiotic resistance, cancer, tissue typing, and/or pharmacology is highly desirable. Previous experience in diagnostic assay development is also preferred.

### SCIENTIFIC LIAISON/ STAFF SCIENTIST

You will act as a scientific liaison with various collaborators and will interface with, train and coordinate outside collaborators. You'll also be a liaison between the research team and other company departments. Responsibilities will include managing external interactions, guiding the process of obtaining sequences and designing chips, troubleshooting, analyzing results, and teaching people to use chips for discovery research. A Ph.D. in Genetics, Molecular Biology, Biochemistry or a related field is required. You should also have experience with DNA/RNA methodologies including amplification, purification, quantitation, labeling and hybridization. Flexibility to work with people from diverse disciplines and backgrounds in an effective manner is essential, and should be supported by excellent written/verbal and organizational skills and strong computer knowledge.

Offering a small company atmosphere with big scientific potential, Affymetrix provides attractive salaries, comprehensive benefits, and the exhilarating synergy of our world-class multidisciplinary team. For consideration, please send or fax your resume to Affymetrix, Human Resources, 3380 Central Expressway, Santa Clara, CA 95051; Fax (408) 481-0422. We are an equal opportunity employer.



# PARKE-DAVIS

## The Freedom to Discover.

At Parke-Davis our dedicated Scientists have made us a world leader in developing innovative pharmaceutical products. As our strategy for pharmaceutical discovery leads to further breakthroughs, we are looking a Senior Scientist and an Associate Scientist to join our Antibacterial Discovery team in Ann Arbor, Michigan.

## Senior Scientist

The successful candidate will establish a vigorous research program focused on identifying new targets for antibacterial therapy in medically-important organisms such as Staphylococci and Streptococci. The selected individual must have established expertise in gram-positive bacterial systems and will be proficient in skills necessary to exploit and apply information from genomic sequencing efforts. An associated ability to establish and evaluate virulence models for these organisms is a must.

A Ph.D. along with 3+ years of postdoctoral experience in a relevant field and a strong record of publication are required. Strong interpersonal skills, including mentoring and collaborating, are also required. More established investigators are also encouraged to apply. **JOB CODE: CJM-96069** 

## Associate Scientist

This position is available in the Infectious Diseases Department for an experienced Molecular Biologist who will support numerous ongoing projects. The selected individual will have established skills in a variety of molecular biological methods including DNA cloning, DNA sequencing (manual and automated methods), PCR, nucleic acid hybridization and construction of recombinant genomic libraries.

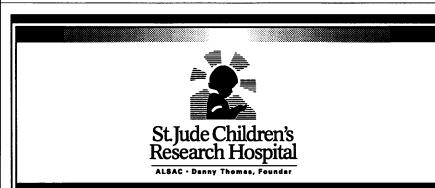
An MS with 2+ years' research experience or a BS with 5+ years' research experience is required. A working knowledge of bacterial genetic systems and experience with protein expression systems are essential. Familiarity with vectors useful for either prokarvotic or

eukaryotic/viral research efforts is also essential. JOB CODE: CJM-PM



Members of our world-class pharmaceutical team enjoy competitive salaries, benefits and career growth potential. For consideration, please send, fax or e-mail a resume, indicating the position of interest, to: Parke-Davis, Human Resources Department, 2800 Plymouth Road, Ann Arbor, MI 48105. Fax: (313) 998-3394. E-mail: resume@aa.wl.com.

Equal Opportunity in action. Smoke-free work environment.



## POSTDOCTORAL FELLOWSHIPS

St. Jude Children's Research Hospital, a premier research center for catastrophic diseases of childhood and biomedical research, offers the JOHN H. SUNUNU and RICHARD A. GEPHARDT ENDOWED FELLOWSHIPS IN BASIC SCIENCE RESEARCH. The fellowships were established by the American Lebanese Syrian Associated Charities/St. Jude Children's Research Hospital Boards of Governors and Directors, in honor of Mr. Sununu and Mr. Gephardt's contributions to the political life of the nation.

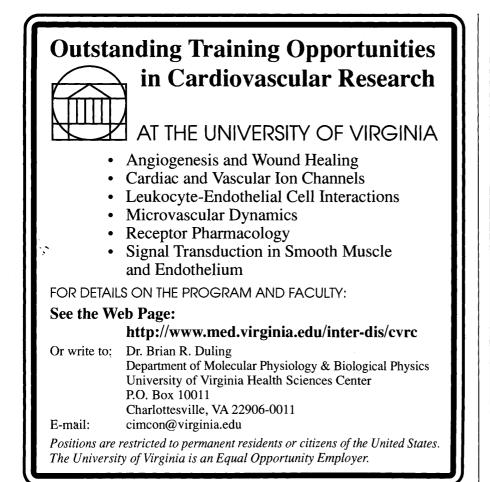
The fellowships are open to junior investigators with an M.D., Ph.D., D.V.M., or Pharm.D. degree who seek training experience in one of the specialty areas of laboratory biomedical research available, which include: biochemistry, experimental oncology, experimental hematology, infectious diseases, genetics, cell and gene therapy, immunology, pharmaceutical sciences, molecular pharmacology, structural biology, tumor cell biology and virology/molecular biology.

Fellowship awards are made for up to three years and are based on merit, recommendations and promise of a productive career in biomedical research. Stipends are highly competitive.

Applicants should provide a curriculum vitae, a brief description of their research interests and have letters of reference sent to: Christian C. Patrick, M.D., Ph.D., Office of Academic Programs, St. Jude Children's Research Hospital, 332 N. Lauderdale Street, Memphis, TN 38105-2794, USA.

Please use source code: PDF/CP when applying. All information must be received by December 15, 1996. Award notification will be January 15, 1997 with a beginning date thereafter.

An Equal Employment/Affirmative Action Employer



### ASSISTANT/ASSOCIATE PROFESSOR DEPARTMENT OF GENETICS HARVARD MEDICAL SCHOOL

The Department of Genetics invites applicants for the position of Assistant/ Associate Professor. Qualifications for the position include a strong potential for imaginative research in any area of contemporary genetics. This position offers very significant scholarly and scientific resources as well as the opportunity to teach graduate and medical students with strong interests in genetics research.

Applicants should submit, as soon as possible, but prior to November 30th, curriculum vitae, bibliography, and a brief (limit to 500 words) description of research interests, and should ask three references to send letters of recommendation. These materials should be directed to:

Dr. Philip Leder, Chairman Department of Genetics Harvard Medical School 200 Longwood Avenue Boston, MA 02115 For more information: www.HMSGenetics.Harvard.edu

Harvard University is an Equal Opportunity/ Affirmative Action Employer and encourages the applications of qualified women and minorities.



### Chemistry Faculty Positions

### 」 at The Ohio State University

The Department of Chemistry at The Ohio State University seeks to recruit several outstanding individuals to its faculty. We wish to hire individuals at the senior level to begin autumn 1997 Although exceptional individuals in all areas of chemistry will be considered, special attention will be paid to candidates in targeted areas, particularly the fields of environmental chemistry, materials chemistry, and chemistry of life processes. Among our open senior appointments we hope to include the Fox Professor of Materials Chemistry and a senior appointment in the area of mass spectrometry. Applications received before December 1 will be given full consideration. Candidates should submit a curriculum vitae, a statement of research and teaching interests, and the names of three references to: Chair of Faculty Search Committee, The Ohio State University, Department of Chemistry, 100 W. 18th Avenue, Columbus, OH43210. (614) 688-3390; Fax: (614) 292-1685; email: search@chemistry.ohio-state.edu.

The Ohio State University is an Equal Opportunity, Affirmative Action Employer. Women, minorities, Vietnamera veterans, disabled veterans and individuals with disabilities are encouraged to apply.

### ASSISTANT PROFESSOR PHYSICAL CHEMISTRY Department of Chemistry The University of British Columbia

The Department of Chemistry of The University of British Columbia is seeking to fill a tenuretrack opening at the assistant professor level starting **July 1, 1997**.

This appointment is in the area of **experimental physical chemistry** of solids and liquids involving, for example, clusters, colloids, diffraction, electrochemistry, polyelectrolytes and polymers.

This position requires a Ph.D. degree, postdoctoral experience preferably, and a proven research track record. The successful candidate will be expected to teach chemistry courses at the undergraduate and graduate level and to develop vigorous and creative research programs. The salary will be commensurate with experience.

The University of British Columbia welcomes all qualified applicants, especially women, aboriginal people, visible minorities and persons with disabilities. The position is subject to final budgetary approval and, in accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents.

Applications should consist of a curriculum vitae, list of publications, summary of research interests, a detailed research proposal, and the names and addresses of at least three references. The applicants should arrange for the complete application to be sent to:



**Professor S. Withers** 

Chairperson Future Appointments Committee University of British Columbia 2036 Main Mall Vancouver, B.C. CANADA V6T 1Z1

### Faculty Positions, Anatomy and Cell Biology, University of North Dakota, School of Medicine and Health Sciences

Applications are invited for two tenure track positions at the Assistant/Associate Professor level to begin July 1, 1997. The first position is sponsored jointly by the Departments of Anatomy and Cell Biology, Physical Therapy, and Occupational Therapy, and carries teaching responsibilities in an interdepartmental gross anatomy course for physical and occupational therapy students. Candidates for this position with recent experience in teaching PT/OT anatomy (or other allied health sciences anatomy with emphasis on extremities/function) will be given high consideration. A second position, sponsored solely by the Department of Anatomy and Cell Biology, requires expertise in human histology and cell biology, and developmental anatomy, and the successful candidate will contribute equally to team-taught courses in those fields. Candidates for both positions will be expected to contribute to graduate student education and must have a Ph.D., or equivalent with at least two (2) years of postdoctoral training. Research experience is preferred in cell and developmental biology, molecular biology, and/or related fields. Successful applicants will be expected to carry on vigorous extramurally funded research programs. Review of applications will begin immediately and continue until the positions are filled. Candidates for the first position should send curriculum vitae, descriptions of research and teaching experience, and three (3) letters of reference to Dr. Edward C. Carlson, Chairman. Candidates for the second position should send the same information to **Dr. Mark D. Olson, Search** Committee Chair, Department of Anatomy and Cell Biology, Box 9037, University of North Dakota School of Medicine and Health Sciences, Grand Forks, North Dakota 58202. The University of North Dakota is an equal opportunity/affirmative action employer and invites applications from all qualified individuals.

## *Meta*Xen

## A New Venture with Xenova Group Ltd.

MetaXen, located in the San Francisco Bay Area, has recently been founded to rapidly develop leads from Xenova's strong high throughput screening and natural product chemistry operations as a means of advancing their clinical development candidates. In addition, the company will utilize information derived from DNA sequence databases to identify and validate new drug targets. Offering an interdisciplinary approach to drug discovery with a primary focus on cancer targets, we currently have the following opportunities available.

### GROUP LEADER Molecular Biology

You will establish and lead a Molecular Biology team responsible for identification and validation of novel therapeutic targets, study of gene function in human disease, application of new technologies to target validation, and protein engineering in collaboration with our X-ray crystallography group. Requirements include a PhD in Molecular Biology and postdoctoral experience including a minimum of 4-6 years of industry experience.

### **GROUP LEADER** Computational Science

You will hire and manage a group of PhD computational and computational chemistry scientists to collaborate with scientists in the UK and a growing group of chemists and biologists in California. To qualify you should have a PhD in Computer Science with an undergraduate or graduate minor in Biology or Chemistry, 3 years' pharmaceutical industry experience and 5 years' overall post doctoral experience applying machine learning techniques to real-world problems.

## SCIENTIST

**Computational Science** We seek a PhD in Computer Science to generate code to create proprietary algorithms for drug discovery, specifically in the areas of structure-based design, multi-parameter lead optimization, and DNA database searching (bioinformatics). Your background should include an undergraduate or graduate minor in Biology or Chemistry and 1-2 years' overall postdoctoral experience applying machine learning techniques to real-world problems.

## SCIENTIST

Computational Chemistry Working closely with Medicinal Chemists and Computational Scientists, you will apply computational methods to Medicinal Chemistry. Requirements include a PhD in Organic Chemistry and 2+ years of comparable industry experience.

Excellent opportunities for scientific and personal growth in a stimulating, entrepreneurial environment. Candidates interested in learning more details, should contact Dr. Michael J. Ross, MetaXen, P.O. Box 117490, Burlingame, CA 94011-7490. EOE



care industry. For consideration, please send your resume with salary history to: Abbott Laboratories, Job #96-NCW-2496, D583, AP9A, 100 Abbott Park Rd., Abbott Park, IL 60064. Abbott is an Affirmative Action Employer/Smoke-Free Environment.



## **Combinatorial Chemistry**

Zeneca Pharmaceuticals, a worldwide leader in the discovery, development and marketing of innovative pharmaceuticals, seeks experienced, talented synthetic organic chemists for the following openings in the Chemical Technology Section at our corporate research facility in Wilmington, Delaware:

**TEAM LEADER** — You will lead a team of chemists in the design and preparation of small molecule compound libraries for integration into high throughput biological screening. This includes development and implementation of a synthetic strategy to construct appropriate small libraries around defined templates. The position requires a Ph.D.-level chemist with 3 or more years of postdoctoral or professional work experience, a strong background in organic synthesis, preferably as applied to compounds of medicinal interest, and a broad understanding of reaction mechanisms and physical organic chemistry.

**SENIOR AND ASSOCIATE CHEMISTS** — You will join a team engaged in developing solid phase and solution phase synthetic chemistry for application to compound library synthesis, utilizing investigational synthetic chemistry to characterize reaction intermediates and products using physical and spectroscopic methods. We seek BS/MS chemists with good laboratory skills in sythetic organic chemistry and proven expertise in the isolation, purification and characterization of synthetic intermediates and products.

We offer an excellent compensation and flexible benefits program, and opportunities for growth with one of the world's leading pharmaceutical research organizations. For consideration, please send your resume to: Dan Lawlor, Human Resources, Code 95-4276, Zeneca Pharmaceuticals, 1800 Concord Pike, P.O. Box 15437, Wilmington, DE 19850-5437. An Equal Opportunity Employer M/F.



### UNIVERSITY OF CALIFORNIA, SANTA BARBARA ENVIRONMENTAL SCIENCE AND MANAGEMENT

The School of Environmental Science and Management invites applications for four faculty positions: (i) environmental policy and management; (ii) environmental economics; (iii) environmental microbiology; and (iv) environmental information systems. Positions ii-iv will be tenure-track appointments at the assistant professor level. The policy and management position can be at the associate or full professor level. We seek applicants with strong publication records; vigorous, original research programs; evidence of excellence in teaching; and a commitment to a new, interdisciplinary program.

For primary consideration apply by December 18, 1996. Thereafter positions are open until filled. Start date is July 1, 1997. The Ph.D. is normally required at the time of appointment.

- (i) The environmental policy and management position requires teaching and research in the development of environmental policy and its implementation within economic, institutional, legal, political, and corporate frameworks. Experience beyond academic settings is a high priority.
- (ii) The environmental economics position focuses on natural resources and environmental economics. It requires strong linkages to the natural sciences and environmental policy.
- (iii) Areas of expertise for the environmental microbiology position include microbial ecology, environmental contamination and bioremediation, and environmental biogeochemistry.
- (iv) The primary foci of the environmental information systems position are the acquisition, analysis, management, and distribution of environmental data, especially spatial data. Expertise in environmental science or management is also necessary.

The School's programs focus on the diagnosis, assessment, and mitigation of the environmental problems of today and the future. The curriculum includes the natural science, social science, policy, and corporate perspectives. We will offer the master's and doctoral degrees and a certificate for mid-career associates. Our first students enrolled in Fall 1996.

Applicants should send a curriculum vitae, the names and addresses of four references, a statement of research and teaching interest, and reprints of no more than five publications to Search Committee, School of Environmental Science and Management, University of California, Santa Barbara, CA 93106-5131; Tel. 805-893-7363; Fax 805-893-7612; Email: search@csm.ucsb.edu.

The University of California is an Equal Opportunity/Affirmative Action Employer. We encourage all qualified applicants to apply, including minorities, women, and persons with disabilities.

### POSITIONS OPEN

### EXECUTIVE ADMINISTRATOR

Genome Therapeutics Corporation (GTC) is a proven leader in the field of genomics and a major contributor in the Human Genome Project. GTC is a fast-growing and financially successful biotechnology company-in the past year we have initiated a \$22 million and \$43 million alliance to develop genome-based drugs and vaccines. Our fastpaced corporate office seeks a very motivated individual to serve as EXECUTIVE ADMINISTRATOR to our new Chief Scientific Officer. The successful candidate will provide advanced administrative support, perform ongoing project work, and interface with internal and external executives as well as national and international organizations. This position requires an exceptional person capable of understanding and preparing scientific and technical grant and contract proposals, handling budgets, and interacting significantly with in-house accounting and operations person nel regarding administrative issues. Since the opening necessitates dealing with work of an extremely confidential nature, considerable business acumen is required. Discretion, tact, diplomacy, and a friendly and interactive personality are paramount. In addition, a thorough understanding of biology with some exposure to genetics is essential. The ideal candidate will possess a B.S./M.S. business and/or scientific degree plus at least five years of experience in a directly relevant position. Experience working in the bio-tech or pharmaceutical industry is strongly preferred.

GTC offers an excellent compensation and benefits package. Please send or fax your résumé to: Human Resources, Genome Therapeutics Corporation, 100 Beaver Street, Waltham, MA 02154. FAX: 617-893-9535. An Equal Opportunity Employer, Minorities/Females/ Disabled/Veterants.

POSTDOCTORAL POSITION: Immediate vacan-
cy. Identification of antimitotic drug binding sites on
tubulin. Ph.D. in biochemistry or closely related field and
experience in protein chemistry required. Applications
will be reviewed until the position is filled. Send curricu-
lum vitae and have three reference letters sent to: Dr.
Richard Himes, Department of Biochemistry, Uni-
versity of Kansas, Lawrence, KS 66045. Email:
himes@kuhub.cc.ukans.edu. Equal Opportunity/Affirma-
tive Action Employer.

### POSITIONS OPEN

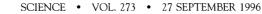
RESEARCH ASSOCIATE UNIVERSITY OF VIRGINIA Experimental High Energy Physics

The University of Virginia High Energy Physics group is seeking qualified applicants for a **RESEARCH ASSOCI-ATE** position to work on the physics of CP violation. In the short term, this work will focus on the KTEV experiment at Fermi National Accelerator Laboratory, and, on a longer time scale, on the LHC-B beauty physics experiment at CERN. This position is now open. The successful candidate is expected to play an important role in the KTEV experiment in the operation of an e+e- trigger based on a transition radiation detector and in the development of lepton detectors and triggers for the LHC-B experiment. Applications including curriculum vitae, a list of publications, and three letters of reference should be sent to: **Prof. B. Cox, Physics Department, McCormick Road, University of Virginia, Charlottesville, VA 22901.** Information concerning this position may be obtained through **Email: Cox@UVAHEP.phys.virginia.edu**.

### SCIENTIST

A new company destined to be the leading provider of the next generation of protein analysis tools is seeking exceptional candidates to provide technical support and work in customer labs on joint research and development programs. This technology will enable "Molecular Phenomics Research," the next step beyond Genomics. The ideal candidate will have a recent Ph.D. in biochemistry or molecular biology, excellent interpersonal skills, good research skills, willingness to travel, and the desire to be an integral part of an exciting, fast-growing organization. East and west coast positions available with competitive salary and stock options. Send résumé to: Box 71, Science, 1200 New York Avenue, NW, Washington, DC 20005.

A POSTDOCTORAL POSITION is available immediately to study the regulation and the structure-function relationships of both erythroid and nonerythroid protein 4.1 isoforms. Candidate should have a strong background in protein chemistry and molecular biology. Send curriculum vitae and names of three references to: Edward J. Benz, Jr., M.D., 1033 Ross Research Building, Department of Medicine, The Johns Hopkins University, Baltimore, MD 21205.



**COLBY COLLEGE** NEUROBIOLOGIST

The college is seeking a Neurobiologist to fill a tenure-track position beginning as Assistant Professor of Biology to begin September, 1997. Candidates should have a Ph.D. and a strong commitment to undergraduate education. Applicants should have broad training in organismal biology with a special emphasis on neurobiology. A research interest in invertebrate or lower vertebrate neurobiology is preferred. Teaching will include neurobiology, organismal biology courses related to the candidate's discipline, team teaching in the introductory course in some years, and may include a course for non-biology majors. An active research program, including supervision of undergraduate research, will be expected. Familiarity with liberal arts colleges, teaching experience, and post-doctoral experience are sirable.

Women candidates will be considered for an endowed Clare Boothe Luce chair, which provides dedicated annual research funds, and salaries for undergraduate research assistants.

Please submit a letter of application, statement of teaching and research interests, curriculum vitae, reprints of publications, undergraduate and graduate transcripts, and three letters of recommendation to: Professor Paul G. Greenwood, Chair, Department of Biology, Colby College, 5720 Mayflower Hill, Waterville, Maine 04901. (207) 872-3322. E-mail: pggreenw@colby.edu. Application review will begin November 4, 1996. For more information about the College, please see the Colby web page at: http://www.colby.edu. Colby is an AA/EO employer and encourages applications from women and minority candidates.

### POSITIONS OPEN

### SCIENTIFIC APPLICATION FIELD SPECIALISTS

IGEN, Inc., a medical diagnostics company in Gaithersburg, Maryland, is searching for a technical application field specialist for initial full-time contract work to potentially be converted to full-time employment (Ph.D., M.S., and/or a technically experienced assay developer) in the following areas: Chicago (full-time position available as soon as possible); Boston; Indianapolis; Ann Arbor, Michigan; Washington, D.C.; New Jersey area; San Francisco; Seattle; Basel, Switzerland; Germany; and U.K. The candidates should have hands-on assay development experience in some or all of the following technical areas: immunoassays (Elisa's, RIA's, etc.), biochemistry, immunochemistry, protein expression, molecular applications a bonus, with optimization of assays directed by the candidate exhibiting unique problem-solving skills (kit use only not acceptable). Demo skill, some travel, and strong people skills and strong work ethic a must. Compensation will be aggressive and determined according to previous earnings. Please FAX résumés with desired location identified to: FAX: 301-947-6990, Attention: Human Resources. Equal Opportunity Employer.

### **RESEARCH ASSOCIATES**

Adolor Corporation, a rapidly growing biopharmaceutical company, is seeking medicinal chemists at the B.S./ M.S. level to synthesize novel analgesics and pharmacologists at the B.S./M.S. level to evaluate these compounds *in vivo*. Excellent communication and teamwork skills are required. Chemists should have two to five years of relevant industrial experience. Pharmacologists should have experience in neuropharmacology, animal models of CNS disorders, statistical analysis of data and stereotaxic surgery. Please send résumé to: LS, Adolor Corporation, 395 Phoenixville Pike, Malvern, VA 19355.

### MEDICAL WRITER, PHARMACEUTICALS

Strong general biomedical background; flair for writ ing; ability to evaluate scientific literature and learn new subjects quickly. Write journal articles, lecture scripts pharmaceutical product overviews. Send résumé to **Project House**, 1 University Plaza, Suite 210, Hack ensack, NJ 07601.

## CHAIRMAN DEPARTMENT OF PHARMACOLOGICAL & PHYSIOLOGICAL SCIENCES

The Division of the Biological Sciences, which includes the Pritzker School of Medicine, is seeking a Chairman for the Department of Pharmacological & Physiological Sciences. This is a multi-disciplinary department with 20 primary faculty in the fields of neurobiology, cell physiology and pharmacology. The Chairman reports to the Dean of the Division and is responsible for providing academic and administrative leadership in research and teaching of undergraduate, graduate, postgraduate and medical students. The successful applicant will have an outstanding record of scientific accomplishment as well as demonstrable teaching and administrative abilities which will qualify him or her for the rank of Professor. In addition to the Department resources, the candidate will oversee the Brain Research Center for Molecular & Cellular Neurobiology, one of five biomedical research centers housed within the University's new Jules F. Knapp Medical Research Building. The Center will incorporate 10,000 net square feet of newly-constructed research space.

Please send nominations or applications (curriculum vitae and the names of three individuals familiar with your work) by December 1, 1996 to: Dr. Jeffrey Bluestone, Chair, Search Committee for Pharmacological & Physiological Sciences, c/o C. Foster, The University of Chicago, 5841 South Maryland Avenue, MC 1000, Chicago, IL 60637.



## THE UNIVERSITY OF CHICAGO

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

# SEQ LTD

### **RESEARCH POSITIONS**

SEQ LTD is focused on the development of a Single Molecule Sequencing technology having the potential to achieve a breakthrough in genome science. Based in Princeton, NJ, SEQ plans to establish a fully integrated, genetic information services business, leveraging off its proprietary DNA sequencing technology and expanding into the related areas of molecular genetics and genome-based bioinformatics.

Single Molecule Sequencing involves the isolation, manipulation, and enzymatic digestion of single molecules of DNA and subsequent identification of single nucleotides in the determination of DNA sequence. It is an inherently rapid and inexpensive method with potential for achieving several orders of magnitude improvement in the cost-effectiveness of DNA sequencing when compared with Sanger sequencing.

SEQ has several scientific positions available offering the opportunity to join a multi-disciplinary group of chemists, physicists, and biologists in the excitement of pioneering research and new technology development in a start-up company environment. We seek outstanding scientists with a demonstrated record of achievement for the following positions:

### **DIRECTOR OF RESEARCH**

This position requires an experienced, innovative, and assertive individual capable of leading SEQ's research programs in DNA chemistry and enzymology as well as in the development of novel techniques for isolating and manipulating single DNA molecules, initially from both cDNA and genomic DNA libraries and ultimately from single cells. Ph.D. in molecular biology/molecular genetics with 5+ years of experience.

### SENIOR SCIENTISTS

Enzymology—Ph.D. plus postdoctoral and/or industry experience in nucleic acid enzymology, including discovery, purification, and kinetic and physical analysis of DNA metabolic enzymes.

Surface Chemistry—Ph.D. plus postdoctoral and/or industry experience in surface chemistry, including the development of novel derivitization and patterning schemes.

Molecular Spectroscopy—Ph.D. plus postdoctoral and/or industry experience in fluorescence spectroscopy with particular emphasis in molecular photophysics.

Analytical Chemistry—Ph.D. plus postdoctoral and/or industry experience in ultrasensitive separation and detection of biomolecules.

### **RESEARCH ASSOCIATES**

**DNA Chemistry and Enzymology**—B.S/M.S. with hands-on experience in quantitative manipulation of DNA, the study of DNA/protein interactions, and DNA enzymology.

**Spectroscopy/Analytical Chemistry**—B.S/M.S. with handson experience in the use of analytical instrumentation as applied to biological problems.

Compensation includes competitive salary and benefits with equity participation in a development-stage company. Please send C.V. to:

Research Position, SEQ LTD c/o David Sarnoff Research Center 201 Washington Rd., Princeton, NJ 08540 Attn: Ms. Irene Weston Email: iweston@seq.sarnoff.com

#### STAFF SCIENTIST

The Barnett Institute of Chemical Analysis and Materials Science at Northeastern University invites applications for a STAFF SCIENTIST position. We are seeking a researcher of exceptional promise who will use molecular, genetic, and biophysical approaches to develop new analytical techniques. Applicants with industrial experience are encouraged to apply. Please send a curriculum vitae and a statement of research interests to:

Dr. Barry L. Karger Barnett Institute 341 Mugar Life Science Building Northeastern University 360 Huntington Avenue Boston, MA 02115

Northeastern University is an Equal Opportunity/Affirmative Action Employer.

#### POSTDOCTORAL POSITIONS Children's Nutrition Research Center Baylor College of Medicine

The USDA/ARS Children's Nutrition Research Center, Department of Pediatrics, Baylor College of Medicine, is accepting applications from individuals with Ph.D. and M.D. degrees to participate in a wide range of research programs related to nutritional needs of infants, children, and adolescents, as well as pregnant and lactating women. The Center's 30 faculty members direct research areas ranging from whole body macronutrient metabolism to effects of nutrients at molecular and cellular levels. Positions funded by an NIH training grant as well as a limited number of positions funded by other sources are available. For information, contact: William C. Heird, M.D., Director, Postdoctoral Training Program, Children's Nutrition Research Center, Baylor College of Medicine, 1100 Bates Street, Houston, TX 77030. Telephone: 713-798-7177; FAX: 713-798-7187; Email: wheird@bcm.tmc.edu.

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

#### NEUROBIOLOGY POSTDOCTORAL POSITION DUKE UNIVERSITY

Active, well-funded, well-equipped lab focusing on understanding peripheral nerve regeneration accuracy. Long-term primate experiments involve standard EMG procedures, motor unit counting, and behavioral measures of hand function following median nerve lesions. Molecular experiments in rodents include quantitative PCR, differential display PCR, subtractive hybridization, and the antisense-RNA technique of expression profiling. Experience in animal surgery, standard whole-animal physiology techniques, and general molecular biology background is highly desirable. Curriculum vitae and three recent letters of reference with telephone numbers to: **Roger Madison, Ph.D., Associate Professor of Experimental Neurosurgery/Neurobiology, Box 2609, Duke University Medical Center, Durham, NC 27710.** 

**POSTDOCTORAL RESEARCH** position is available immediately at the Guthrie Research Institute to study the control mechanism of tumor necrosis factorand Fas antigen-mediated apoptosis by intracellular regulatory proteins and by a novel extracellular matrix adhesion molecule (*JBC*, **270**:7765, 1995; *BBRC*, in press, 1996). Ph.D. or M.D. plus significant experience in molecular cloning, cDNA library construction, sequencing, and expression, and a background in immunology or cell biology is required. Send curriculum vitae and three reference letters to: **Dr. N.-S. Chang, Guthrie Research Institute, 1 Guthrie Square, Sayre, PA 18840. FAX: <b>717-882-5151; Email: nschang@inet.guthrie.org**. *An Equal Opportunity Employer.* 

PREDOCTORAL POSITION available immediately in the Department of Nutrition Sciences at the University of Alabama at Birmingham (UAB) (http://w3.lhl.uab. edu/nusc/dept.htm). Major areas of study include body composition, energy metabolism, cancer, arthritis, and nutrient metabolism. Faculty expertise includes molecular genetics and biology, biochemistry, endocrinology, physiology, medicine, and microbiology. Direct inquiries to Clinton J. Grubbs, Ph.D., Director Ph.D. Program, Nutrition Sciences Department, 318 Webb Building, University of Alabama at Birmingham, Birmingham, AL 35294-3360. Telephone: 205-934-6384; FAX: 205-975-5082; Email: poseyp@admin.shrp.uab.edu. An Equal Opportunity/Affinnative Action Employer.

POSTDOCTORAL POSITIONS: Pharma-

cology, Flow Cytometry, Synthetic Organic Chemistry, and Bioanalytical Chemistry for research in rationale drug design and pharmaceutical development. Send curriculum vitae to: T. G. Burke, University of Kentucky, ASTeCC Building, Lexington, KY 40506. Affirmative Action/Equal Opportunity Employer.

TH: UNIVERSITY OF TEXAS MDANDERSON CANCER CENTER

POSITIONS OPEN

A POSTDOCTORAL POSITION is available to study p53 function as a tumor suppressor and transcriptional activator using standard biochemical procedures and transgenic mice. Applicants should have a strong background in molecular biology and genetics. Please send curriculum vitae and two letters of recommendation to: Guillermina Lozano, Ph.D., University of Texas M.D. Anderson Cancer Center, Department of Molecular Genetics Box 11, 1515 Holcombe Boulevard, Houston, TX 77030.

### NIH POSTDOCTORAL POSITION

Laboratory of Biological Chemistry, Gerontology Research Center, NIA, NIH, invites applications for a POST-DOCTORAL POSITION beginning November 1, 1996, to study the role(s) of mitochondria in neuronal cell death and age-associated neurodegenerative disease. Qualified candidates must have a doctoral degree (M.D. or Ph.D.) and fewer than five years of postdoctoral experience. Experience in molecular and cell biology preferred. The fellow will join a new program that focuses on the mitochondrion as both a source and a target of reactive oxygen species and its involvement in apoptotic cell death in neuronal cells. Studies use molecular biology techniques along with fluorometric probes with confocal microscopy. Applicants should send a curriculum vitae and three references (names, addresses, and telephone numbers) to: Dr. Charles R. Filburn, Laboratory of Biological Chemistry, Gerontology Research Center, Mailstop 12, 4940 Eastern Avenue, Baltimore, MD 21224. NIH is an Equal Opportunity Employer.

POSTDOCTORAL POSITION for studies of complement and inflammation. Background in molecular biology or biochemistry preferred. Please send curriculum vitae and three references to: Dr. Anne Nicholson-Weller, Beth Israel Hospital/Harvard Medical School, DA-617, 330 Brookline Avenue, Boston, MA 02215. FAX: 617-277-6061. Equal Opportunity Employer/ Affirmative Action.

### POSTDOCTORAL POSITION FDA's National Center for Toxicological Research

An opportunity is available to pursue research on biochemical mechanisms for endocrine disruption in animals and humans by environmental anti-thyroid chemicals. Demonstrated skills in toxicology, protein biochemistry, and mass spectrometry are desirable and the Ph.D. degree (e.g., toxicology, biochemistry, chemistry, pharmacology) is required. Stipend \$34,000. To apply send curriculum vitae to: Dr. Daniel R. Doerge, HFT 230, NCTR, Jefferson, AR 72079. FAX: 501-543-7720; Email: ddoerge@fdant.nctr.fda.gov.

FDA/National Center for Toxicological Research is an Equal Opportunity Employer.

### POSTDOCTORAL POSITION Molecular Epidemiology

A **POSTDOCTORAL** position at the University of California San Francisco School of Medicine to study the molecular epidemiology of brain cancer and childhood leukemia. A strong background in the use of molecular biology in analysis of genetic lesions in primary tumors as well as a working knowledge of epidemiology and biostatistics is preferred. Send curriculum vitae and names of three references to: **Dr. John Wiencke, Department of Epidemiology and Biostatistics, University of Cali**fornia San Francisco, San Francisco, CA 94143-0560.

> **POSTDOCTORAL POSITION** is available immediately to study molecular mechanisms of cell signaling by G protein coupled receptors. Molecular biology, biochemical, and immunological approaches are used to study receptor targeting, coupling to G proteins, and ligand mediated regulation of receptor levels. Preferred background in pharmacology or biochemistry. Send curriculum vitae and three reference letters to: Dr. Mariel Birnbaumer, UCLA, Department of Anesthesiology, Box 951778, BH-612 CHS, Los Angeles, CA 90095-1778. FAX: 310-825-6711.

## POSITIONS OPEN

### POSTDOCTORAL POSITIONS Molecular Epidemiology/Cancer Genetics

The Center for Environmental and Occupational Health and Toxicology (CEONT) in the University of Pittsburgh's Graduate School of Public Health is seeking **POSTDOC-TORAL FELLOWS** with experience in mammalian cell culture and molecular biology to participate in two new NIHfunded studies. The first is a molecular epidemiological investigation of the impact of maternal lifestyle factors and exposures on fetal somatic mutation and will involve cloning and molecular characterization of *hpt* mutants from placental blood T-lymphocytes. The second involves the identification and characterization of mutations in cancer-relevant genes in malignant and normal human tissues. Send your curriculum vitae to: William L. Bigbee, Ph.D. or Phouthone Kcohavong, Ph.D., CEOHT, 260 Kappa Drive RIDC Park, Pittsburgh, PA 15238 or contact Dr. Bigbee, Telephone: 412-967-6534; Email: wlbigbee+@pitt.edu or Dr. Keohavong, Telephone: 412-967-6526; Email: pho1@vms.cis.pitt.edu for additional information.

### EMORY UNIVERSITY

POSTDOCTORAL POSITION available immediately in the Biophysics Group of the Department of Physics, Emory University. The successful candidate will study the kinetics and structures of intermediates in laser-triggered, radical-mediated enzyme reactions by using techniques of pulsed-EPR spectroscopy (ESE, FT-EPR), and conduct a series of graduate student seminars on theory and application of EPR. Experience with both cw- and pulsed-EPR methods and instrumentation is preferred. Send curriculum vitae and names of three references to: Dr. Kurt Warncke, Department of Physics, 1001 Rollins Research Center, 1510 Clifton Road NE, Emory University, Atlanta, GA 30322.

Emory University is an Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL RESEARCH ASSOCIATE** position is available immediately for the study of the mechanisms of hypoxic/ischemic injury. Familiarity with a variety of molecular biology techniques, specifically subtractive library construction, cloning, transfections, and protein expression, is required. Salary and benefits commensurate with experience. Please send curriculum vitae and three letters of recommendation to: Dr. Brian Herman, CB Number 7090, 232 Taylor Hall, UNC-CH, Chapel Hill, NC 27599. Email: bhgf@med.unc.edu.

**POSTDOCTORAL POSITIONS**—UCLA: A) Function and regulation of novel secreted forms of human IgE produced by alternative RNA splicing. Ligand binding and biologic functions of isoforms and molecular studies on the regulation of alternative eRNA splicing. Contact: **Dr. A. Saxon, FAX: 310-206-8107**. B) Role of MAP kinase cascades in TCR signaling including role in transcriptional activation of genes involved in T-cell proliferation and apoptosis. Contact: **Dr. A Nel, FAX: 310-206-8107**. Equal Opportunity Employer.

POSTDOCTORAL FELLOW/RESEARCH ASSO-CIATE position is available in the Laboratory of Molecular Physiology at the Guthrie Research Institute to investigate signal transduction pathways involved in neuronal calcium channel modulation (see Neuron, 13:657–669, 1994; Neuron, 14:1029–1038, 1995; Nature, 380:255–258, 1996). Experience with patch clamp and/or molecular biology techniques would be an advantage. Send curriculum vitae and the names of three references to: Dr. Stephen R. Ikeda, Guthrie Research Institute, 1 Guthrie Square, Sayre, PA 18840. FAX: 717-882-5151; Email: sikeda@inet.guthrie.org.

### POSTDOCTORAL RESEARCH FELLOW

To work on NIH-funded projects on body fat distribution cardiovascular disease risk and hormone status in young females. Send cover letter, curriculum vitae, and names and addresses of three references to: Dr. M. I. Goran, Department of Nutrition Sciences, University of Alabama at Birmingham, Birmingham, AL 35294-3360. See our home page: w3.lhl.uab.edu/nusc/emru.htm. San Francisco State University invites applications for Chair, Department of Mathematics. Included in the College of Science and Engineering, the Department has 23 tenure-track faculty. We offer Bachelor's degrees in Mathematics, Applied Mathematics, and Statistics, as well as a Master's in Mathematics. We also provide courses for many other majors, and support the University's general education and teacher preparation programs. Faculty projects include work in pure and applied mathematics and statistics, mathematics education, and software engineering. We seek a leader to help us focus and enhance these programs, to represent us to the administration, to strengthen. ties with other disciplines and our community, and to promote and facilitate scholarship and professional development.

Candidates should qualify for appointment as full professor with tenure. They should demonstrate these qualifications: Ph.D. in a mathematical science and a continuing record of teaching, research, and program development and organization; leadership, compassion for students and faculty, and good interpersonal skills; and the ability to communicate effectively with scientific, industrial, and urban educational communities. Salary will reflect qualifications and experience.

We are a comprehensive urban university with about 20,000 FTE students whose average age is 25. This Pacific Rim city is the center of major academic, commercial, and high-tech industrial activity. Through its Advisory Board, the College is pursuing closer ties with local industry. The interests, aspirations, and diversity of our students reflect San Francisco's uniquely dynamic multiculturalism. An Affirmative Action/Equal Opportunity employer, we encourage and expect qualified applicants from all segments of our society.

Applications, including complete vita, a brief statement of academic leadership philosophy, and names and addresses of or letters from 4 references, should arrive by 15 November 1996 to receive full consideration. Address: Mathematics Chair Search Committee, Dean's Office, College of Science and Engineering, San Francisco State University, 1600 Holloway Avenue, San Francisco, CA 94132. When Science And Technology Come Together, Anything Is Possible.

### AND EVERYTHING IS ACHIEVED

By merging pharmaceutical science with technology, DEII Lilly and Company is creating unprecedented opportunities to better meet the global population's health care needs. While we continue our search for innovative pharmaceuticals, we're also pioneering ways to use technology to improve health care. And achieving all this, is a dedicated team of technical professionals. Their talents and skills in a variety of technical arenas, keep our \$6+ billion company on the cutting edge.

### SENIOR SCIENTIST FOR CARDIOVASCULAR RESEARCH-MOLECULAR BIOLOGIST/ MOLECULAR CARDIOLOGIST

The Cardiovascular Division of Eli Lilly and Company's Discovery Research Component is looking for an innovative individual committed to industrial research in the area of molecular biology/cardiology. The existing group is focusing their research in the four main areas of thrombosis, congestive heart failure, atherosclerosis, and stroke. Lilly's commitment to a growing genomics program throughout the discovery components leads us to add this position. The successful candidate will possess a Ph.D. or MD degree with at least 3-5 years of postdoctoral experience. An outstanding and documented background in molecular biology with extended experience in cardiovascular research is required. Candidates with prior industrial experience are encouraged to reply. **Dept. ADSCMPH09** 

### POSTDOCTORAL FELLOWSHIPS IN CARDIOVASCULAR RESEARCH

Our Postdoctoral Fellowship Program is continuing to grow and we have several opportunities available in the Cardiovascular Discovery Research group over the next year. Successful candidates will possess a Ph.D. in a related scientific discipline and a strong commitment to carrying out research in collaboration with a Lilly scientist. Specific requirements will be described on our internet home page (www.lilly.com) over the coming months. These postdoctoral assignments will be in the four focus areas of our cardiovascular research efforts: thrombosis, congestive heart failure, atherosclerosis, and stroke. **Dept.:** ADSCMPD09

### ADDITIONAL OPPORTUNITIES

Our continued commitment to research and development is creating additional opportunities for scientists in a variety of disciplines. Visit our internet home page at www.lilly.com over the next months for updated information on openings in fields such as molecular biology, cell biology, biochemistry, pharmacology, and pharmacokinetics.

We offer an excellent salary and comprehensive benefits. For immediate consideration, please send resume and cover letter to: **Corporate Recruiting**, (**Dept-position of interest code**), Lilly Corporate Center, Indianapolis, IN 46285. We are an equal opportunity employer dedicated to diversity and the strength it brings to the workplace.

# We're looking for entrepreneurial vision and the skills to implement it.

These are pivotal roles in our Applied Genomics Business, and a chance to be part of the strong commitment that's creating breakthroughs in biotechnology at AxCell Biosciences Corporation. You will help us capitalize on our successful past and prepare us for a bold future developing innovative new products.

### <u> GENERAL MANAGER</u>

Reporting to the Board of Directors, you'll be the CEO of our Applied Genomics Business Unit, providing vision, direction and leadership. This involves responsibility for business plan development; orchestrating presentations to potential investors, pharmaceutical companies and representing AxCell at appropriate industry and investment communitysponsored meetings. You will also direct staff recruitment/organization and all operations. A minimum of BA/BS required, with advanced degree a plus. 7-10 years of general management experience, preferably with startup experience in the biotechnology industry. Business development expertise required.

### VICE PRESIDENT, Research & Development

Reporting to the General Manager, you'll be the hands-on resource that brings the vision to life, and responsible for the scientific research in Applied Genomics. Duties include participation in developing a business plan; staff recruitment and organizing/directing the scientific mission; and providing key technical support in presentations to potential investors, and pharmaceutical companies at industry sponsored scientific symposia.

MD, MD/Ph.D., Ph.D. or equivalent with Molecular Biology background required. At least 10 years of post-doctoral experience, with 3-5 years in the biotechnology industry either in a startup, or established pharmaceutical company, is essential. Management experience is also necessary.

We offer competitive salaries and substantial equity participation. For confidential consideration, send resume and cover letter to:



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# Imagine The Possibilities

At Berlex, we've built our reputation on FDA-approved product successes and a proven track record in the pharmaceutical industry. Currently, our Cardiovascular Research Department is seeking a Postdoctoral Fellow to join us in the beautiful San Francisco Bay Area.

### Postdoctoral Fellow Cardiovascular Research

This two-year Postdoctoral position will study novel serine protease in thrombosis and hemostasis. Approaches include gene expression, sitedirected mutagenesis, enzymatic assays, and analysis of knock-out mice. Applicants should have a background in mouse genetics and histology; experience in vascular biology and molecular biology would be an advantage.

To apply, send your curriculum vitae, a statement of research interests and the names of three references to the attention of Qingyu Wu, BERLEX, 15049 SAN PABLO AVE., DEPT. PDF, RICHMOND, CA 94804-0099. Principals only, please. EOE.



### Boston College Tenure Track Positions in Biology

Continuing its growth and development, the Department of Biology at Boston College is seeking applications to fill two tenure track positions for the Fall of 1997. It is expected that at least one of these positions will be at the Assistant Professor level; one appointment at the Associate Professor level may be considered for an exceptionally well-qualified candidate. Boston College is a university with seven separate schools and colleges and over 14,000 students. The Biology Department has an active graduate program with approximately 50 Ph.D. and M.S. students, and over 600 undergraduate majors. Further information about the University and the Department can be found at www.bc.edu and www.biology.bc.edu.

The successful candidates will be expected to develop strong extramurally funded research programs in aspects of cellular or developmental biology that complement our current research programs in: cellular and molecular biology; neurobiology; developmental and reproductive biology; and immunology. The Department is committed to excellence in teaching, and the new faculty members will be expected to contribute to lecture courses at the undergraduate and graduate levels.

Salary levels, start-up funds, and laboratory resources are competitive with other research universities; a major renovation and expansion of the Departmental facility is currently in the design phase. Applicants must have a Ph.D. degree and at least 3-4 years of postdoctoral experience. Applications including curriculum vitae, a list of publications, and a two-page summary of current and future research plans should be sent to the search committee. Applicants must also arrange for three letters of recommendation to be sent. The application deadline is November 22, 1996; however, early application is recommended as applications will be reviewed when received. Mail applications to:

Search Committee Department of Biology Boston College Chestnut Hill, MA 02167

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



### FACULTY POSITIONS DEPARTMENT OF CELL BIOLOGY

The Department of Cell Biology in the Schools of Medicine and Dentistry at the University of Alabama at Birmingham invites applications for two tenure-track positions at the Assistant, Associate, or Full Professor level. We are seeking individuals with a Ph.D. or equivalent degree, postdoctoral experience, and clear evidence of research productivity, creativity, independence, and potential. The search is focused on the recruitment of individuals with research expertise in cell and developmental biology who employ molecular approaches to the investigation of fundamental biological questions. The successful candidate will be expected to develop a strong, extramurally funded research program; to participate in the training of Ph.D. candidates; and to contribute to departmental teaching responsibilities. Salaries and start-up funds are competitive and commensurate with qualifications and experience. For information about the department, view our website at http://www.bmg.uab.edu/ cellbio. Applications should include descriptions of past research accomplishments and future research directions, a current curriculum vitae, and the names of five references, and should be sent before December 1, 1996, to:

> Drs. Elizabeth Sztul and J. Michael Wyss Department of Cell Biology The University of Alabama at Birmingham Basic Health Sciences Building 1918 University Boulevard Birmingham, AL 35294-0005 esztul@uab.edu jmwyss@uab.edu The University of Alabama at Birmingham is an

Equal Opportunity Employer.

### CELLULAR AND MOLECULAR NEUROBIOLOGY Postdoctoral/Research Associate Positions

The Loeb Research Institute at the Ottawa Civic Hospital, University of Ottawa, has an active program in cellular and molecular neurobiology with themes related to neurotransmission, cellular homeostasis, and response to ischemic/anoxic injury. The Neuroscience Program encompasses both basic and clinical research in an integrated environment with Institute programs in hormones, growth and development, and clinical epidemiology. Positions for 1-3 years are available to candidates holding a Ph.D. and/or M.D. and expertise in molecular and/or cellular neurobiology, electrophysiology (patch and voltage clamp), and/or confocal microscopy, to work with faculty on the research areas shown below. Stipends start at \$28,650/annum.

Petro Doroshenko, Ph.D.	Volume-regulated ion channels
Bin Hu, M.D., Ph.D.	Synaptic circuitry and function in audi- tory thalamus and cortex
Howard Lesiuk, M.D.,	Signal transduction in CNS ischemia
Catherine Morris, Ph.D.	Mechanosensitive ion channels and mem- brane trafficking
Johnny Ngsee, Ph.D.	Molecular mechanisms of synaptic trans- mission
Leo Renaud, M.D., Ph.D.	CNS circuits regulating autonomic and neuroendocrine function
Peter Stys, M.D.	Sodium and calcium-dependent mecha- nisms in anoxic/ischemic injury in CNS
Mario Tiberi, Ph.D.	Signal transduction at dopaminergic receptors

For details, contact any of the scientists by fax at **613-761-5360**. By December 15, 1996, applicants to a specific project should submit a CV, names of three referees, and a brief statement of research interests to the appropriate scientist(s) at: Ottawa Civic Hospital Loeb Research Institute, 1053 Carling Avenue, Ottawa, Ontario, K1Y4E9, CANADA.

**OTTAWA CIVIC HOSPITAL** 

LOEB RESEARCH INSTITUTE



### **CELL BIOLOGIST**

The Department of Biological Sciences at Dartmouth College seeks applicants for a tenure track position at the level of Assistant Professor. The successful candidate will be expected to establish and supervise an independent research program that will attract extramural funding and provide research training for graduate and undergraduate students. The successful applicant will join a group of faculty whose research involves cellular, genetic, and biochemical approaches to studying problems in a number of model systems. Candidates should have a Ph.D. (or equivalent) and at least two years of relevant postdoctoral experience. Candidates should expect to participate in the teaching of cell biology or biochemistry to undergraduates, as well as a graduate course in their area of research specialization.

Please send a current curriculum vitae, a list of your referees with their FAX numbers, and a statement of research and teaching interests, and arrange to have three letters of reference sent under separate cover to:

> Victor Ambros, Chair Cell Biologist Search Committee Department of Biological Sciences Dartmouth College 6044 Gilman Hall Hanover, NH 03755-3576

Although materials may be submitted by FAX (603-646-1347), the original documents are ultimately required. Application review will begin on 15 October, 1996. Women and members of minority groups are strongly encouraged to apply. Dartmouth College is an Equal Opportunity/Affirmative Action Employer. Additional information about the Department may be viewed on the World Wide Web: http: //coos.dartmouth.edu/~mcpeek/index.html

### Columbia University College of Physicians and Surgeons Faculty Positions in the Departments of Biochemistry and Molecular Biophysics, Genetics and Development,

and Microbiology

Several tenure-track faculty positions at the **assistant professor** level are available as part of the expansion and enhancement of the three departments named above. Strong preference will be given to candidates who are addressing fundamental questions in biology using novel approaches or combining standard techniques in innovative ways, particularly within the following areas:

- Signal transduction using biochemical and/or genetical approaches
- Control of the cell cycle in prokaryotes or eukaryotes
- Developmental biology of animal or microbial systems
- Relationships of sequence to structure to understand mechanisms of protein or RNA folding
- Theory, computation, and informatics applied to genetical or structural questions

The College of Physicians and Surgeons of Columbia University provides a highly interactive research environment. The expansion of the faculty of these Basic Science departments is made possible in part by generous funding obtained from the Howard Hughes Medical Institute and aims to help young scholars initiate successful, innovative laboratory programs.

Applications should include a curriculum vitae and a brief statement of research goals and interests. Three persons should be requested to send a letter of reference directly. Applications and letters of reference should arrive no later than **December 6, 1996,** and be sent to:

Ms. Nina Steinberg, Basic Sciences Recruitment Program Columbia University 701 West 168th Street, Room 1602 New York, NY 10032 U.S.A.

Columbia University takes affirmative action to ensure equal opportunity.

Purdue Pharma L.P. is a multi-million dollar leader in the development of specialized medicines for a wide variety of therapeutic areas including the treatment of chronic illness and the relief of severe pain. Many of our medicines are market leaders in their categories and have found wide acceptance among patients and physicians alike. As we continue to innovate and expand our operation into new areas, we seek the help of a broad range of professionals who share our commitment to excellence. Currently, we have a need for the following individuals in our growing R&D center in Westchester County, NY:

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Required: BS in a science/technical field, 3-5 years customizing and managing an Access\*Chrom Chromatography System.

Preferred: A chemistry degree with analytical focus, experience with VAX clusters, TCP/IP, Novell and/or Windows NT desktops and networks, RS232C/IEEE488 instrument interfacing, knowledge of cGMP/ISO9000 validation and certification. Experience with C++, PowerBuikler, Oracle, and Barcode ADC systems knowledge a plus.

### PHARMACEUTICAL ANALYSIS SCIENTISTS

Successful applicants will be responsible for assay development and validation, specifications, dissolution methodologies and special projects. Industrial pharmaceutical analysis experience in research and development is required, as well as experience with HPLC, GC, UV/VIS and wet chemistry. Knowledge of GMPs and good documentation skills are essential.

### SENIOR SCIENTIST/FORMULATIONS

Primary responsibilities include the research of new and novel drug delivery systems.

Qualified applicants will be innovative, with a proven history (10+ years) of the development of oral, parenteral and/or transdermal systems. Complete understanding of formulation issues, processing variables, regulatory considerations, and new material physical and chemical characterization are paramount. The successful candidate will perform hands-on work.

We offer competitive salaries, outstanding benefits, and uncommonly supportive working environment where you'll have many ongoing opportunities for advancement. For immediate consideration, please forward your confidential resume including salary requirements to: Dept. SR, The Purdue Research Center; 99-101 Saw Mill River Rd, Yonkers, NY 10701 or FAX (94) 968-130. Corporate standards require drug testing. An Equal Opportunity Employer M/FD/N.

### TENURE TRACK POSITION MOLECULAR, CELLULAR, OR DEVELOPMENTAL BIOLOGY

The Laboratory of Immunobiology is creating a tenure track position for an M.D. or Ph.D. scientist to develop an independent program in molecular, cellular, or developmental biology. The Laboratory of Immunobiology conducts a broad program of research in cancer biology including studies of cancer-causing genes (the VHL gene and the MET proto-oncogene), and studies of chemotactic cytokines (IL8, MSP and MCP-1). Members of the laboratory perform basic and clinical studies of families with inherited urologic malignancies to identify the genes responsible for these disorders, and study the structure and function of chemotactic cytokines. The successful candidate will have broad latitude in determining research directions. However, areas of special interest to the laboratory are functional studies of tumor suppressor proteins and development of mouse models of human malignant disease (For further information see: www.ncifcrf.gov/kidney). Candidates should have a record of scientific accomplishment in molecular, cellular, or developmental biology as demonstrated by quality, peer-review published research reports. Financial support to hire a technician and a postdoctoral fellow will be available. A fully equipped laboratory will also be provided. The salary range is \$50-60,000. A detailed description of research interests should be submitted along with 3 letters of recommendation and a curriculum vitae to: Ms. Teri Cecil, National Cancer Institute, NCI-FCRFC, Building 576, Room 102, Frederick, Maryland 21701 (301-846-5402). Applications must be received by January 1, 1997. The National Cancer Institute is an Equal Opportunity Employer. Selection for this position will be based on merit, with no discrimination for non-merit reasons such as race, color, religion, gender, national origin, politics, marital status, physical or mental disability, age, sexual orientation, or membership or non-membership in an employee organization.

### POSTDOCTORAL POSITIONS

**TWO POSITIONS** available for Ph.D. or M.D. in molecular genetics or immunology. Research in immunology in **Dr. Y. S. Choi's** laboratory involves cellular and molecular mechanisms of B cell differentiation. Research in molecular genetics in **Dr. Jawed Alam's** laboratory involves transcriptional regulation of heme oxygenase and other oxidative stress-activated genes. Interested candidates are encouraged to send a curriculum vitae to:

> Dr. Y. S. Choi or Dr. J. Alam Department of Research Alton Ochsner Medical Foundation 1516 Jefferson Highway New Orleans, LA 70121

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### NEUROIMMUNOLOGY FELLOWSHIP

One-year, renewable position for a Ph.D. to study mechanisms of CNS inflammatory demyelination in multiple sclerosis or animal model to include studies on T cell co-stimulation, cytokines, growth factors, and/or identification of antigenic epitopes and T cell receptor usage. Techniques include cell culture (human and animal lymphocytes, astrocytes, oligodendroglia, macrophages), immunocytochemistry, autoradiography, RT-PCR, Northerns and cloning. Multiple collaborations available. Interested persons should contact: Dr. John Trotter, Barnes-Jewish Hospital MS Center at the Washington University Medical Center, Box 8111, 660 South Euclid Avenue, St. Louis, MO 63110. Telephone: 314-747-2111; FAX: 314-747-1345; Email: trotterj@ neuro.wustl.edu.

**POSTDOCTORAL POSITION** available immediately to study the physiological properties of enteric and pancreatic neurons. Projects include characterization and role of glutamate receptors, characterization and projections of pancreatic neurons, and gut-pancreas interactions. Applicants should be trained in intracellular recording with skills in current and voltage clamp. Expertise in calcium imaging, cell culture, or molecular biology is also desirable. Send curriculum vitae and names of three references to: Dr. Annette Kirchgessner, Department of Anatomy and Cell Biology, Columbia University College of Physicians and Surgeons, 630 West 168th Street, New York, NY 10032. FAX: 212-305-3970.

**POSTDOCTORAL** position to study tyrosine kinases in synapse formation and function at the neuromuscular junction. Two kinases, Fyn and Fyk, that phosphorylate the acetylcholine receptor will be studied using molecular and cellular approaches. Projects involve investigating i) regulation of Fyn and Fyk by innervation and extracellular factors, ii) signal transduction cascade, and iii) role of Fyn and Fyk in acetylcholine receptor expression, clustering, and channel kinetics. Dr. S. Swope, EPO8 Research Building, Georgetown University Medical Center, 3970 Reservoir Road, Washington, DC 20007.

**POSTDOCTORAL/RESEARCH** ASSOCIATE **POSITION** (plant modeling/plant physiology) is available immediately to join in development of computer simulation models for sweetpotato and peanut grown in controlled environments and under field conditions. Design of experiments for validating models also expected. A Ph.D. in plant or other life sciences with a strong background in modeling or biometry preferred. Send résumé and three references to: Dr. Phil Loretan, Campbell Hall, Tuskegee University, Tuskegee, AL 36088. Telephone: 334-727-8129; FAX: 334-724-4551. Women and minorities are encouraged to apply.

### BACTERIAL GENETICISTS

TWO POSTDOCTORAL positions are available to study inducible mutagenic phenomena in bacterial model systems. Ph.D. and experience in prokaryotic genetics/ molecular biology required. Please write to: M. Zafri Humayun, Ph.D., Professor of Microbiology and Molecular Genetics, UMDNJ-New Jersey Medical School, MSB F607, 185 South Orange Avenue, Newark, NJ 07103-2714. Email: humayun@umdnj.edu. The University of Medicine and Dentistry, New Jersey is an Affimative Action/Equal Opportunity Employer, Minorities/Fenales/Disabled/Veterans, and a member of the University Health System of New Jersey.

### POSITIONS OPEN



POSTDOCTORAL RESEARCH ASSOCIATE positions in cellular neurophysiology are available for one to three years in the Neurosciences Unit at the Loeb Research Institute, Ottawa Civic Hospital and University of Ottawa. You will be using in vitro slice preparations of hypothalamus or spinal cord, current and patch clamp techniques, infrared and confocal microscopy to study intrinsic and synaptic properties, transmitter-receptor in teractions, ligand- and voltage-gated ion channels, and second messengers in neurons and neural circuits regulating neuroendocrine and autonomic functions. Requires M.D. or Ph.D. degree and appropriate electrophysiological expertise. The Neurosciences Program comprises eight principal investigators with expertise in molecular and cellular neurobiology applied to neurotransmission, signal transduction, post-ischemic neuronal function and survival. Salary range \$28,650 to \$34,500 (Can). Send or FAX curriculum vitae, a short statement of interests, and names of three references to: Dr. Leo Renaud, Director, Neurology/Neurosciences, Ottawa Civic Hospital, 1053 Carling Avenue, Ottawa, Ontario KIY 4E9 Canada. FAX: 613-761-5360.

#### POSTDOCTORAL POSITION BRIGHAM AND WOMEN'S HOSPITAL HARVARD MEDICAL SCHOOL

Position available to investigate herpesvirus oncogenesis. Work will focus on viral gene expression and molecular biology of Epstein-Barr virus (EBV), Kaposi's sarcoma associated herpesvirus, and murine herpesvirus 68. Location in new facility on same floor as other major EBV and herpesvirus groups. Send curriculum vitae and names of three references to: Dr. Kenneth Kaye, Division of Infectious Diseases, Brigham and Women's Hospital, 181 Longwood Avenue, Boston, MA 02115. FAX: 617-525-4257; Email: kaye@mbcrr.harvard.edu.

SENIOR POSTDOCTORAL POSITION is available immediately to study steroid and protein hormone receptors in the pituitary and breast cancer. Candidates must have several years of experience in molecular biology as well as training in endocrine research. Prior work with tissue culture techniques is desirable. Send curriculum vitae and names of three references to: Dr. Nira Ben-Jonathan, Department of Cell Biology, University of Cincinnati Medical School, 231 Bethesda Avenue, Cincinnati, OH 45267-0521. Telephone: 513-558-4821; FAX: 513-558-4823; Email: benjonn@uc.edu.

**POSTDOCTORAL POSITION** available in laboratory of **Dr. E. Hamel**, Developmental Therapeutics Program, National Cancer Institute (NCI). Laboratory interests include mitosis and cytokinesis, interactions of small ligands and proteins in microtubule structure and function, and drug interactions with microtubules and microfilaments. Prior cytoskeletal research experience is highly desirable. Inquiries (curriculum vitae and bibliography) to: **Building 37/5C25, 37 Convent Drive, MSC 4255, Bethesda, MD 20892-4255.** NIH is an Equal Opportunity Employer.

NIH-funded **POSTDOCTORAL POSITION** available immediately to study novel receptor tyrosine kinasemediated signaling mechanisms in human breast cancer and breast development. Requirements: recent Ph.D. with strong background in molecular and cell biology. Send curriculum vitae and three references to: Angel Lee, M.D., Ph.D., Department of Biochemistry and Molecular Biophysics, Box 8231, Washington University Medical School, St. Louis, MO 63110. FAX: 314-362-7183; Email: lee@biochem.wustl.edu.

POSTDOCTORAL POSITION—Phosphatidylinositol 3-kinases in signal transduction. The laboratory uses molecular and cell biological techniques, including microinjection, to study the role of P1 3-kinases in mitogenesis and endocytic trafficking. Experience in molecular biology/protein chemistry required. Send curriculum vitae, summary of research experience, and names of references to: Dr. Jonathan M. Backer, Department of Molecular Pharmacology, Albert Einstein College of Medicine, Jack and Pearl Resnick Campus, 1300 Morris Park Avenue, Bronx, NY 10461. Equal Opportunity Employer.

### POSITIONS OPEN

### DEVELOPMENTAL NEUROBIOLOGY

**POSTDOCTORAL POSITION** available to study control of patterning and cell diversity in cerebral cortex (see Soc. Neurosci. Abstracts, 1996, 484.3 and 484.10). Projects utilize molecular biology, viral vector gene transfer, cell culture, and neuroanatomy. Send curriculum vitae and names of three references to: Elizabeth Grove, Email: egrove@drugs.bsd.uchicago.edu; FAX: 312-702-1216. The University of Chicago is an Equal Opportunity/ Affirmative Action Employer.

POSTDOCTORAL POSITION—UCLA Molecular Cardiology, available immediately to study integrin signaling and function in cardiac development and disease using cell and transgenic models. Ph.D. or M.D. degree and expertise in molecular biology required; animal/ physiology training desirable. Send curriculum vitae and names of three references to: Dr. Robert S. Ross, Department of Physiology, UCLA School of Medicine, Los Angeles, CA 90095-1751. FAX: 310-206-5661; Email: rross@physiology.medsch.ucla.edu. UCLA is an Affirmative Action/Equal Opportunity Employer.

### POSTDOCTORAL POSITION MOLECULAR PARASITOLOGY

A position is available to study mechanisms of gene expression and molecular pathogenesis in the protozoan parasite *Trypanosoma cruzi*. Studies address the promoter structures, mechanisms of mRNA maturation, and genetic manipulation of these parasites. Send curriculum vitae and letters of reference to: Gregory A. Buck, Box 980678, MCV Campus, Virginia Commonwealth University, Richmond, VA 23298.

POSTDOCTORAL POSITION available to study molecular mechanisms of long chain fatty acid transport in mammalian cells (see *Cell*, **79**: 427-436). M.D. or Ph.D. and experience in molecular biology and cell biology required. Send curriculum vitae and names of three references (with FAX numbers) to: **Dr. J. Schaffer**, Washington University School of Medicine, 660 South Euclid Avenue, Box 8086, St. Louis, MO 63110. FAX: 314-362-8957.

### RESEARCH ASSOCIATE Cell Biology/Immunology of Parasitism

POSTDOCTORAL POSITION(S) to study the cell biology or immunology of *Toxoplasma gondii*. Ph.D. experience in molecular biology, biochemistry, or immunology desirable. Submit curriculum vitae and references to either Dr. Lloyd Kasper or Dr. Joseph Schwartzman, Dartmouth Medical School, Hanover, NH 03755. FAX: 603-650-1299; Email: lloyd.kasper@Dartmouth.edu.

TWO POSTDOCTORAL positions are available in projects on phytoremediation of contaminated soils and selection of variants in ornamentals. Applicants must have a strong background in plant physiology and tissue culture. Experience in biochemistry and transformation techniques would be an asset. Salary will be commensurate with experience. Send résumé with names of three referees (by October 30, 1996) to: Dr. P. K. Saxena, Department of Horticultural Science, University of Guelph, Guelph, Ontario, NIG 2WI Canada. Email: psaxena@uoguelph.ca; FAX: 519-767-0755.

**POSTDOCTORAL POSITION** available immediately to study signaling through receptors for tumor necrosis factor leading to apoptosis or cell growth. Experience in molecular biology, two hybrid cloning, and signal transduction desirable. Send curriculum vitae and names, telephone and FAX numbers of three references to: Dr. David B. Donner, Department of Physiology and Biophysics, Indiana University School of Medicine, 635 Barnhill Drive, Indianapolis, IN 46202. FAX: 317-274-3318.

### POSTDOCTORAL RESEARCH SCIENTIST

Position available to study radioresistance and cell cycle checkpoint control in yeast and mammals. A Ph.D. in molecular biology or a related field is required. Experience with recombinant DNA and yeast preferred but not essential. Send curriculum vitae with names and addresses of three references to: Dr. H. B. Lieberman, Center for Radiological Research, Columbia University, 630 West 168th Street, New York, NY 10032. We are an Affirmative Action/Equal Opportunity Employer.

## Washington UNIVERSITY IN ST LOUIS School of Medicine

### ASSISTANT PROFESSOR Developmental Biologist

The Department of Molecular Biology and Pharmacology at Washington University School of Medicine is recruiting an individual at the level of Assistant Professor on the tenure track. We are seeking an outstanding scientist working in the area of neurobiology. Special emphasis will be given to systems where genetic tools can be used to address fundamental questions regarding development of the nervous system. Our faculty utilize a broad range of organisms including yeast, *C. elegans, Drosophila,* and mice to investigate cell fate specification, pattern formation, proliferation, differentiation, migration, and death (http://pharmdec.wustl.edu).

Applicants should forward a curriculum vitae, a short summary of research plans, and three letters of recommendation by Dec. 1, 1996 to:

Search Committee(c/o Jeffrey I. Gordon,Head) Department of Molecular Biology and Pharmacology

Washington University School of Medicine 660 South Euclid Avenue, Box 8103 St. Louis, Missouri 63110

Washington University is an Affirmative Action/ Equal Opportunity Employer committed to increasing the representation of women and minority groups on its faculty.

### CHAIR

Department of Biomedical Sciences University of South Alabama

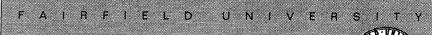
Applications are invited for the position of Chairperson of Biomedical Sciences. Biomedical Sciences is an undergraduate Department whose unique mission is to provide a strong undergraduate basic medical sciences degree program for premedical and pre-Ph.D. students. The program also provides service teaching for other health professions students.

Successful applicants will have an earned doctorate in either physiology or pharmacology and must (1) have a distinguished record in teaching and in research; (2) have proven leadership capability and administrative skills; (3) have strong interpersonal skills including the ability to communicate effectively with internal and external constituencies; and (4) have a strong commitment to undergraduate education in basic medical sciences.

Application deadline: November 15, 1996.

Send letter, c.v., and 3 letters of reference to: Dr. Daniel E. Sellers, Associate Dean, College of Allied Health Professions, 1500 University Commons, University of South Alabama, Mobile, AL 36688.

The University of South Alabama is an EEOC Affirmative Action Employer. M/F/D.



## **Two positions in BIOLOGY**

Positions to start September 1997. Candidates with a Ph.D. and a strong commitment to undergraduate teaching and research are encouraged to apply. Start-up funds are available. Salary and benefits are competitive.

## Molecular Developmental Biologist

Search reopened. This position is for an assistant professor (tenure track) or an associate professor. Teaching responsibilities include lecture/laboratory courses in genetics and developmental biology for biology majors and the development of an upper division elective course. Participation in the

introductory biology course, undergraduate research and grant-writing initiatives is expected. At the associate level, strong record of successful teaching, undergraduate research initiatives, and grant writing required.

## **Evolutionary Biologist**

Assistant professor (tenure track). Molecular biology experience expected. Preferred teaching responsibilities include lecture/laboratory courses in comparative anatomy and the development of upper division elective courses, one of which should be an evolutionary biology course. Participation in the introductory biology course, undergraduate research and grant-writing initiatives is expected.

Fairfield University, the Jesuit University of Southern New England, is located in Fairfield, Connecticut and enjoys a beautiful 200-acre campus in the suburban town of Fairfield within easy access to New York, New Haven and Boston.

Send letter of application, curriculum vitae, statement of teaching goals, statement of research interests and goals (including how you would involve undergraduates), selected reprints and three letters of reference to: Search Committee Chair, Molecular Developmental Biologist Position (or Evolutionary Biologist Position), Biology Department, Fairfield, CT 06430. The deadline for completed applications is November 8th.



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

## THE UNIVERSITY OF CENTRAL FLORIDA DEAN OF THE COLLEGE OF EDUCATION

The University of Central Florida (UCF) invites applications and nominations for the position of Dean of the College of Education. UCF is a comprehensive metropolitan university that currently enrolls over 27,000 students on its three campuses, and is one of the fastest growing universities in the country. The main campus is located in suburban Orlando, Florida, which is one of the nation's most dynamic metropolitan areas.

Enrolling over 6,000 undergraduates and 1,700 graduates as full-time and part-time students, the College of Education is an NCATE-accredited, comprehensive professional college with 30 degree programs at the baccalaureate, master's, specialist, and doctoral levels. The College has more than 100 full-time faculty and 21 majors in four academic departments: Educational Foundations, Educational Services, Exceptional and Physical Education, and Instructional Programs. The College is in an exciting period of curricular reform and is dedicated to developing partnerships and improving collaborative efforts with schools, communities, and programs in the UCF service area. The College receives approximately four million dollars in external funding annually.

A candidate for the position must have: (1) an earned doctorate in education; (2) significant leadership experience in higher education at the department or program level or higher; (3) administrative and fiscal management experience in planning, personnel, and budget matters; (4) eligibility for a tenured appointment at the rank of Professor within one of the College's departments; and (5) three years of K-12 teaching experience.

Preference will be given to candidates who meet and demonstrate these qualifications: (1) excellent communication and interpersonal skills; (2) strong planning and decision-making capabilities; (3) experience in developing and implementing partnerships with constituencies; (4) experience in external fund raising; (5) knowledge of the requirements and process for NCATE accreditation.

Applications should include a curriculum vitae; a cover letter that describes the candidate's required and preferred qualifications; and names, addresses, and telephone numbers of four professional references. Screening will begin on November 1, 1996. Applications will be accepted until the position is filled, with an anticipated start date of fall 1997. All materials should be sent to:

Dr. Kathryn L. Seidel, Chair, College of Education Dean's Search Committee College of Arts and Sciences, Office of the Dean Orlando, FL 32816-1990

UCF is an Equal Opportunities/Affirmative Action employer. Women and minorities are encouraged to apply. As an agency of the State of Florida, UCF makes all application materials and selection procedures available for public review.

### POSTDOCTORAL POSITIONS Bacterial Pathogenesis

TWO POSITIONS are available to study Mycobacterium tuberculosis and Streptococcus progenes. Candidates for the M. tuberculosis position must have laboratory experience in study of antimicrobial agent resistance and have experience with working with this pathogen. Candidates for the S. progenes position must have broad experience in immunology, including vaccine-related research, or expertise in matrix metalloprotease work. Send curriculum vitae, including the names and telephone numbers of three references, to: James M. Musser, M.D., Ph.D., Section of Molecular Pathobiology, Department of Pathology, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030. FAX: 713-798-4595. Baylor College of Medicine is an Equal Opportunity/Affirmative Action and Equal Access Employer.

### POSTDOCTORAL POSITION Cox Laboratory for Biomedical Engineering Rice University

A position is available in an NIH-funded laboratory investigating the effects of rheological forces on platelets. The project focuses on the expression and functional analyses of molecules involved in cellular responses to shearing forces. This work is part of an established interdisciplinary research program comprising engineers and biomedical scientists from Baylor College of Medicine and Rice University. Send curriculum vitae and two references to: Dr. M. H. Kroll, Hematology-Oncology (111H), VA Medical Center, 2002 Holcombe Boulevard, Houston, TX 77030. Telephone: 713-794-7111; FAX: 713-794-7733; Email: kroll.michael\_h@ Houston.va.gov. Rice University is an Affirmative Action/ Equal Opportunity Employer.

**POSTDOCTORAL ASSOCIATE(S)** to determine the mechanisms regulating intracellular  $Ca^{2+}$  in normal and diseased tissues. Projects include the study of the skeletal muscle  $Ca^{2+}$  release channel/ryanodine receptors in malignant hyperthermia (*Physiol. Reviews,* 76:537-592, 1996) and the lens of the eye in cataract (*J. Cell Science,* 109:355-365, 1996). Candidates must have the Ph.D. by start date with experience and training in cell biology and electrophysiology. Inquiries to: Dr. Charles F. Louis, Department of Veterinary Pathobiology, University of Minnesota, 1988 Fitch Avenue—Room 295, St. Paul, MN 55108. Telephone: 612-624-4202. The University of Minnesota is an Equal Opportunity Educator and Employer.

### SMITHSONIAN INSTITUTION FELLOWSHIP PROGRAM

Graduate Student, Predoctoral, Postdoctoral, and Senior **FELLOWSHIPS** in animal behavior, ecology, and environmental science, including an emphasis on the tropics; earth sciences and paleobiology; evolutionary and systematic biology, history of science and technology. Tenable in residence at the Smithsonian facilities. Stipends and tenure vary.

Deadline: January 15 annually. Contact: Office of Fellowships and Grants, 955 L'Enfant Plaza, Suite 7000, Desk S, Washington, D.C. 20560. Telephone: 202-287-3271; Email: siofg@sivm.si.edu. An Equal Opportunity Employer.

POSTDOCTORAL POSITION is available to study the structure and function of the HIV-1 envelope protein. A broad range of biochemical, molecular, and cell biological techniques is utilized. Experience in protein biochemistry and molecular biology is desirable. Send curriculum vitae and names of three references to: Dr. Min Lu, Department of Biochemistry, Cornell University Medical College, 1300 York Avenue, New York, NY 10021. Telephone: 212-746-6562; FAX: 212-746-8875; Email: mlu@mail.med.cornell.edu. Comell University Medical College is an Affirmative Action/Equal Opportunity Employer.

### POSTDOCTORAL POSITION

Available immediately for Ph.D. or M.S. for studies on regulation of antibody responses (*J. Exp. Med.* **181**:1319, 1995; *ibid.* **183**:959, 1996). Experience in molecular biology techniques and background of immunology are required. Please send curriculum vitae and letters of reference to: Jan Cerny, M.D., Ph.D., Department of Microbiology and Immunology, University of Maryland School of Medicine, 655 West Baltimore Street, BRB 13-013, Baltimore, MD 21201.

### POSTDOCTORAL POSITIONS Cellular and Molecular Immunology

Two postdoctoral positions are available immediately to study 1) the role of novel costimulatory molecules in developing Th1 and Th2 subsets, and 2) the function of new chemokines and their mechanisms of action in inhibiting HIV infection. A solid background in cellular immunology and molecular biology is highly desirable. Please send your curriculum vitae, and names and telephone numbers of two references to: Byoung S. Kwon, Ph.D., Indiana University School of Medicine, Department of Microbiology and Immunology, 635 Barnhill Drive—MS 255, Indianapolis, IN 46202. Telephone: 317-274-3950; FAX: 317-274-4090; Email: KKWON@ SUNFLOWER.BIO.INDIANA.EDU. Indiana University is an Affirmative Action/Equal Opportunity Employer

### POSTDOCTORAL POSITION Reproductive Molecular and Cellular Biology

A two- to three-year POSTDOCTORAL POSITION is available to study the expression, regulation, and role of a normal retroviral-like gene in human placenta. The position requires a Ph.D. with demonstrated training in molecular biology, molecular virology, or cellular biology. Experience in both molecular and cellular biology is preferred. Please send curriculum vitae, reprints of most recent publications, and names and Email and mailing addresses of three references to: Neal S. Rote, Ph.D., Professor and Chair, Department of Microbiology and Immunology, Wright State University School of Medicine, Dayton, OH 45435. Telephone: 513-873-2996; FAX: 513-873-2012; Email: nrote@sirius. wright.edu. Review of applicants will begin December 1, 1996 and will continue until a suitable individual is hired. Wright State University is an Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION** available for an M.D. or Ph.D. molecular biologist with experience in regulation of bacterial gene expression. We study the pathogenesis of Lyme Disease and are interested in the mechanisms associated with invasion and dissemination of *Borelia burgdofferi* in the mammalian host. Potential for advancement to faculty status.

Send curriculum vitae and names of three references to:

Mark S. Klempner, M.D. Department of Medicine New England Medical Center, Number 236 750 Washington Street Boston, MA 02111

### POSTDOCTORAL TRAINING PROGRAM RHEUMATOLOGY/IMMUNOLOGY DIVISION TUFTS/NEW ENGLAND MEDICAL CENTER

**POSTDOCTORAL RESEARCH** positions available. Focus: studies of molecular mechanisms of *B. burg-doferi* attachment to host cells, T cell responses in Lyme disease, and immune regulation in inflammatory arthritis. Mentors: A. C. Steere, J. Coburn, L. Glickstein, R. Roubenoff, R. R. Isberg, B. T. Huber. Funding: NIH training grant (*permanent U.S. resident*). Applications (curriculum vitae, three reference letters) to: Allen Steere, New England Medical Center, Box 406, 750 Washington Street, Boston, MA 02111. Equal Opportunity Employer.

**POSTDOCTORAL RESEARCH** position available in basic epilepsy research. Expertise sought in extra-cellular and whole-cell recording in human and animal brain slices, and stereotactic animal surgery. Good interaction with a strong neuroscience faculty in a well-funded department; Ph.D. or M.D. Send curriculum vitae to: **Tom Swanson, Medical College of Ohio, 3000 Arlington Avenue, P.O. Box 10008, Toledo, OH 43699-0008**.

POSTDOCTORAL POSITION available immediately to study cis-trans interactions involved in regulation of mRNA stability by cell signaling pathways (see J. Biol. Chem., 270:23996, 1996). Contact: Dr. Julia E. Lever, Department of Biochemistry and Molecular Biology, University of Texas Medical School, P.O. Box 20708, Houston, TX 77225. FAX: 713-794-4150; Email: jlever@utmmg.med.uth.tmc.edu. The University of Texas is an Equal Opportunity/Affinnative Action Employer.

### POSITIONS OPEN

### POSTDOCTORAL RESEARCH ASSOCIATE DEVELOPMENTAL NEUROBIOLOGY

An advanced **POSTDOCTORAL** position is anticipated to be available for three years to study the role of nitric oxide and the NMDA receptor in synaptic development. Applicants should have experience with immunocytochemistry, biochemical assays, calcium imaging, and/or membrane physiology. An academic interest in NO and visual system development is preferred. Salary levels are competitive and the position could convert to a Research Assistant Professorship. Send curriculum vitae and names of three references to: Dr. R. Ranney Mize, Department of Anatomy and the Neuroscience Center, LSU Medical Center, 1901 Perdido Street, New Orleans, LA 70112. An Equal Opportunity/Affirmative Action Employer.

### POSTDOCTORAL POSITION SIGNAL TRANSDUCTION

Research in this exciting and important area will focus on cytokine and growth hormone mediated signal transduction mechanisms in hepatocytes and established cell lines. Emphasis will be on regulation of MAP kinase pathways, particularly JAK/STAT and JNK. Demonstrated experience in molecular biology preferred. Send curriculum vitae, statement of research interests, and names of three references to: Dr. John R. Williamson, Department of Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA 19104. FAX: 215-898-9918.

Equal Opportunity Employer.

A POSTDOCTORAL POSITION is available to study the role of proteolysis in ocular lens development. Research focuses on the proteasome and its regulation during lens cell proliferation and differentiation. Applicants should have a Ph.D. in biochemistry with training in molecular biology. Send curriculum vitae with three references to: B. J. Wagner, Ph.D., Department of Biochemistry and Molecular Biology, New Jersey Medical School, 185 South Orange Avenue, Newark, NJ 07103-2714. Email: wagner@undnj.edu. The University of Medicine and Dentistry, New Jersey is an Affirmative Action/Equal Opportunity Employer, Minorities/Females/Disabled/Veterans, and a member of the University Health System of New Jersey.

#### POSTDOCTORAL FELLOWSHIP The Johns Hopkins University

A POSTDOCTORAL POSITION is available immediately to study the regulation of proliferation and differentiation in intestinal epithelial cells. Research will focus on the structural and functional analysis of a newly identified gut-enriched Krüppel-like transcription factor (see J. Biol. Chem., 271:20009, 1996). Candidates should have a Ph.D. degree and prior experience in molecular biologic approaches. Send curriculum vitae and the names of three references to: Vincent W. Yang, M.D., Ph.D., Departments of Medicine and Biological Chemistry, The Johns Hopkins University School of Medicine, 720 Rutland Avenue, Baltimore, MD 21205.

### POSTDOCTORAL POSITION MOLECULAR BIOLOGY WASHINGTON UNIVERSITY

POSTDOCTORAL POSITION to study genetic defects in human autosomal recessive diseases using novel methods for expression cloning. Applicant must have M.D., Ph.D., or equivalent and a strong background in molecular cell biology. Send curriculum vitae and names of three references (with fax numbers) to: Dr. Daniel S. Ory, Washington University School of Medicine, Box 8086, 660 South Euclid Avenue, St. Louis, MO 63110. FAX: 314-362-8957.

**POSTDOCTORAL POSITION:** A Molecular Biologist is required for a team studying foreign gene expression in the ruminant mammary gland. The person appointed will develop adenoviral or retro viral vectors containing gene constructs, study of gene expression in mammary cell culture systems and *in vivo*. Candidates must have obtained a Ph.D. within the last five years, and have laboratory experience in mamilian expression or viral vector construction. Send curriculum vitae, statement of interests, and three letters of reference to: Dr. Karen Plaut, Department of Animal and Food Sciences, Terrill Hall, University of Vermont, Burlington, VT 05405.

### **GLOBAL CAREER OPPORTUNITIES**



## DEPARTMENT OF ZOOLOGY One Permanent Post (Ref: 186/96)

Applications are invited for a full-time, permanent academic post in Marine Biology to commence in January 1997. Preference will be given to candidates who have a relevant PhD degree, post-doctoral and/or teaching experience and who are committed to productive research and excellence in teaching. Research experience in coastal zone ecology, would be a distinct advantage. Existing facilities within the department include a water chemistry laboratory and limited aquarial space. Applications from young researchers will be welcomed.

The appointment will be made at the level of either Assistant Lecturer or College Lecturer.

Closing Date: Not later than 5.00 p.m. on Thursday, 31 October 1996.

Prior to application, further information (including current salary scales) should be obtained from the **Personnel Office**, **University College Dublin, Betfield, Dublin 4, Ireland** (quoting above reference number). Telephone enquiries: (+353 1) 706 1645 and (+353 1) 706 1436. Fax: (+353 1) 269 2472. Email: acadrec@listserv.hea.ie

UCD is an equal opportunities employer





For further information, please contact: The Embassy of France, Department of Science and Technology • Email: Chateaubriand@ambwash.fr • 4101 Reservoir Rd, N.W., W ashington DC 20007-2176. Fax: (202) 944-6244.

#### TRANSFUSION MEDICINE POSTDOCTORAL RESEARCH FELLOWSHIP University of Pennsylvania

University of Pennsylvania seeks POSTDOCTORAL (M.D. or Ph.D.) FELLOWS who desire research careers in the expanding, multidisciplinary field of transfusion medicine. The program offers a stimulating environment, with varied basic science and applied research opportunities, and is supported by senior faculty in the Departments of Pathology and Laboratory Medicine, Hematology/ Oncology section of Medicine, and Human Genetics, conducting research related to cell membrane (RBCs, white cells, platelets) structure and function, immunobiology of autoimmune and neoplastic disorders, hematopoiesis, and pathophysiology of coagulation disorders. Fellows will conduct independent research for two years under the direction of one mentor, with opportunities for collaborative, interlaboratory projects. Send curriculum vitae, statement of interest, and names and numbers of three references to: Michelle Scott, Pathology and Laboratory Medicine, University of Pennsylvania School of Medicine, M163 John Morgan Building, 36th and Hamilton Walk, Philadelphia, PA 19104-6082. Affir mative Action/Equal Opportunity Employer.

### POSTDOCTORAL POSITION MICROBIAL PHYSIOLOGY

Position available to pursue the development of activity-dependent fluorogenic probes for trichloroethylenedegrading bacteria. Ongoing research involves designing and screening enzyme substrates for conversions to fluorescent products suitable for staining of viable cells. Ph.D. in appropriate field and expertise in microbial physiology, organic contaminant biodegradation, and fluorescence microscopy techniques required. Send curriculum vitae; a brief statement of research experience; and names, addresses, and tolephone numbers of three references by November 15, 1996 (or until position filled) to: Dr. Mary E. Watwood, Department of Biological Sciences, es, Campus Box 8007, Idaho State University, Pocatello, ID 83209. Telephone: 208-236-3090; FAX: 208-236-4570. Equal Opportunity/Affinnative Action Employer

POSTDOCTORAL RESEARCH ASSOCIATE position available beginning November 1, 1996, to study antihypertensive actions of kappa opioid receptor agonists in rat models of hypertension. Recent doctoral degree in pharmacology or related biomedical field desired. Prefer person experienced with aseptic rat surgery, cardiovascular recording techniques, stereotaxic microinjections in brain, and radioligand receptor binding assays. One-year appointment renewable for a second year. Salary plus fringe benefits commensurate with experience and skills Send letter of interest with curriculum vitae and names and addresses of three referees to: Dr. A. J. Ingenito, Department of Pharmacology, School of Medicine, **East Carolina University, Greenville, NC 27858 U.S.A.** An Affirmative Action/Equal Opportunity Employer. Accommodates individuals with disabilities. Applicants must comply with the Immigration Reform and Control Act.

### POSTDOCTORAL RESEARCH POSITIONS Johns Hopkins University School of Medicine

Research in the Division is focused on the cell and molecular biology of the kidney. Specific areas of interest include: Development/differentiation of renal capillary endothelium (B. J. Ballermann); molecular mechanisms of renal cystic disease (G. G. Germino); cell biology and osmo-adaptation of epithelia (J. S. Handler); and regu lation of cell signaling and gene transcription by osmolar-ity (**H. M. Kwon**). Please mail curriculum vitae and names, addresses, and telephone and fax numbers of three referees to the faculty member at: Division of Nephrology, 958 Ross Research Building, 720 Rutland Ave-nue, Baltimore, MD 21205-2196. FAX: 410-955-**0485.** Equal Opportunity Employer/Minorities/Females/Dis-abled. Drug-free and smoke-free. NIH Training Grant requires successful candidates to be U.S. citizens or permanent residents.

### POSTDOCTORAL RESEARCH POSITION

Available immediately to study the molecular virology and pathogenesis of hepatitis C virus infection in man Applicants should have a strong background in molecular biology and prior research experience in virology. Send curriculum vitae and names of three references to: Dr. David Gretch, University of Washington Viral Hepa titis Laboratory, Pacific Medical Center, 1200 12th Avenue South, 9th Floor, Seattle, WA 98144.

### POSITIONS OPEN

### PREDOCTORAL AND POSTDOCTORAL TRAINEES Nathan Shock Center of Excellence in The Basic Biology of Aging and

Alzheimer's Disease Research Center University of Washington

Applications are invited for participation in genetic, cellular, and molecular research supported by a National Institute on Aging Training Grant. Graduate sponsorships via an interdisciplinary molecular and cell biology program or individaul departments. Apply to: Peter S. Rabinovitch, M.D., Ph.D., 1959 NE Pacific Avenue, Box 357470, University of Washington, Seattle, WA 98195 7470. Email: petersr@u.washington.edu.

Equal Opportunity / Affirmative Action Employer.

### CELLULAR AND MOLECULAR BIOLOGY

POSTDOCTORAL POSITIONS available for Ph.D.'s to join one of three multidisciplinary groups in NIH-funded projects studying specific mechanisms in the broad area of epithelial cell biology.

i) Study biological roles of O-glycans: structure/func-tion and regulation of UDP-GalNAc:polypeptide N-Acetylgalactosaminyltransferase; and role of O-glycans in development. Experience in mouse developmental biology preferred.

Study ion transport mechanisms in native cells and the cloning, *in vitro* expression, and structure/function of transporter proteins. Experience in molecular biology required.

iii) Study of exocrine cell biology: signaling mecha-nisms of muscarinic cholinergic and VIP-induced secretion, and points of convergence; and investigate agonist regulation of cell specific gene expression. Experience in molecular approaches preferable.

Submit letter expressing specific interest, curriculum vitae, and the names of references to: **Postdoctoral** Search Committee, University of Rochester Medical Center, Box 611, 601 Elmwood Avenue, Rochester, NY 14642. Email: dculp@medinfo.rochester.edu.

### POSTDOCTORAL POSITION MUCOSAL IMMUNOLOGY

A POSTDOCTORAL FELLOWSHIP is available immediately to study the molecular and cellular basis of murine intestinal intraepithelial lymphocyte development, function, and regulation. Applicants should have a Ph.D., M.D., or D.V.M. with a strong background in cellular immunology, molecular biology, or endocrine biology. Screening begins immediately and will continue until the position is filled. Send curriculum vitae and the names of three references to: Dr. John R. Klein, Department of Biological Sciences, University of Tulsa, 600 South College Avenue, Tulsa, OK 74104. FAX: 918-631-5005. The University of Tulsa is an Equal Employment Opportunity/Affirmative Action Employer

NIH POSTDOCTORAL FELLOWSHIPS are available immediately in the Division of Dermatology, Duke University Medical Center. Areas of interest include: 1) Pathogenesis of human autoimmune disease, including mucosal immunology, T cell function and role of cytokines (Dr. R. P. Hall); 2) Melanocyte/melanoma growth regulation (Dr. J. Grichnik); 3) Characterization of molecular defects in inherited connective tissue disorders (Drs. H. Yeowell, S. R. Pinnell). Only U.S. citizens, permanent residents, and non-citizen nationals are eligible. Salary negotiable. Send curriculum vitae and names of three references to: Dr. Russell P. Hall, Box 3135, Duke University Medical Center, Durham, NC 27710. Duke University is an Equal Opportunity Employer.

### POSTDOCTORAL POSITION Molecular Epidemiology

A POSTDOCTORAL position at the Harvard School of Public Health is available to study the molecular epidemiology of lung cancer. A strong background in the use of molecular biology in analysis of genetic lesions in primary tumors as well as a working knowledge of epidemiology and biostatistics is preferred. Send a curriculum vitae and names of three references to: Dr. Karl T. Kelsey, Department of Environmental Health, Harvard School of Public Health, 665 Huntington Avenue, Boston, MA 02115.

### INTERNATIONAL FELLOWSHIP

The Dan Charitable Trust Fund for Research in Biological Sciences provides financial support for collaborative research between Japan and other countries or participation in international conferences or workshops held in Japan. A total of six fellowships (one- or three-month duration) will be awarded every year. Applications for fellowships must be submitted to the address listed below by October 31, 1996. For more information, write to: Masanori Endo, The Dan Charitable Trust Fund for Research in the Biological Sciences, Nippon Trust Bank, 3-1-8 Nihonbashi, Chuo-ku, Tokyo 103, Japan. FAX: 03-3271-2843.

### POSITIONS OPEN

#### POSTDOCTORAL POSITIONS UNIVERSITY OF MICHIGAN DEPARTMENT OF RADIATION ONCOLOGY

POSTDOCTORAL POSITIONS in the Division of Radiation and Cancer Biology are available immediately to study potential applications of gene transfer therapy to radiation oncology. An additional position to study growth regulation in human breast cancer cells is also available. The Division includes nine laboratories, with several areas under investigation relating to gene therapy including enzyme/prodrug radiation sensitizers, radia tion-induced promoters, radiation-induced and growth factor regulated signal transduction, DNA damage repair pathways, and triggering of p53 induction and apoptosis. The successful candidates will have a Ph.D. and a strong background in cell biology, molecular biology, or molecular pharmacology. Interested applicants should send their curriculum vitae and names of three references to: Theodore S. Lawrence, M.D., Ph.D., Department of Radiation Oncology, University of Michigan, 1331 East Ann Street, Room 3001, Ann Arbor, MI 48109-0582. Equal Opportunity Employer.

POSTDOCTORAL POSITION available immediately to investigate structural features of ligand- and voltage-gated ion channels. Experience in molecular biology and expression of membrane proteins and an interest in expanding these fundamental skills to include the use of state-of-the-art magnetic resonance and optical spectroscopic techniques to study the structure and function of ligand- or voltage-gated channels are desirable. Send curriculum vitae and names of three references to: Al Beth, Ph.D., David Lovinger, Ph.D., or Mike Tamkun, Ph.D., Department of Molecular Physiology and Biophysics, Vanderbilt University School of Medicine, Nashville, TN 37232-0615. Email: beth@lhmrba.hh. vanderbilt.edu; david.lovinger@mcmail.vanderbilt. edu; mike.tamkun@mcmail.vanderbilt.edu.

### ANNOUNCEMENTS

### **RESEARCH INQUIRIES INVITED**

The Smokeless Tobacco Research Council, Inc. invites inquiries regarding grant applications. The Council sponsors independent research into ques-

tions of smokeless tobacco and health. Research support is through a program of grants-in-aid.

Grant applications are evaluated by the Scientific Advisory Board to the Council and will be judged solely on the basis of scientific merit and relevance.

Deadlines for submission of grant applications are De-cember 31, 1996 for July 1, 1997 funding and June 30, 1997 for January 1, 1998 funding. Address inquiries or requests for applications to:

The Smokeless Tobacco Research Council, Inc. 420 Lexington Avenue, New York, NY 10170 Telephone: 212-697-3485 FAX: 212-986-8631 Email: STRC@interramp.com

The Henry M. Jackson Foundation for the Advancement of Military Medicine is interested in new methods and applications in the field of rapid diagnostics for HIV, opment of resistance mutations in HIV as a result of antiviral therapy. Persons or firms with kits demonstrating the capability to address the detection of these viruses are invited to send information on their methodology, performance specifications and sample kits to: Mr. Martin Nau or Mr. John Cooley at:

> The Henry M. Jackson Foundation **Research Laboratories** 1600 East Gude Drive Rockville, MD 20850

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### Institute of Molecular Biology (IMB) Academia Sinica, Taipei Taiwan, ROC

Three **Tenure Track** Principal Investigator positions are open for outstanding individuals to establish research programs in an expanding, stimulating research institute. Scientists with a Ph.D. degree and at least two years of postdoctoral experience in three research areas—vertebrate development, structural enzymology, and yeast cell biology—are especially encouraged to apply.

There are now 27 labs in IMB working on genetics and development, cellular communication and signal transduction, nuclear structure and function, and structural biology. The IMB is well-funded and equipped with excellent facilities.

Successful candidates will be appointed at the Assistant, Associate, or Full Research Fellow level, and are expected to develop their own independent research programs as well as program projects with other research fellows in the Institute.

Deadline for applications is November 15, 1996. First-round candidates will be selected by December 15. The interview process and final decision are expected to be completed by February 28, 1997.

Interested individuals should send curriculum vitae, a description of past research accomplishments and future research interests, and three letters of reference by November 15, 1996, to Search Committee, c/o Fei Chen, Institute of Molecular Biology, Nankang, Taipei, Taiwan 11529, ROC. Fax: 886-2-782-6085.

### **GLOBAL CAREER OPPORTUNITIES**

Immuno is recognised worldwide for its commitment to the highest level of research and development and for its consistent high level investment in this area. Our products make a major contribution to improving world health. All of our 3,000 employees, in every area, are part of this success. We offer you the opportunity to join us in shaping the future development of our company. Applications are invited for a

## CHEMIST/BIOCHEMIST

in our research and development department.

The position will suit candidates looking for a responsible and independent job with ample scope for development. Relevant experience in analytical and preparative protein chemistry, preferably blood coagulation and fribrinolysis, would be an asset. Applicants should be willing to live in Vienna; knowledge of German desirable but not obligatory.

Attractive salary plus benefits package is available and meets international standards. Compensation for relocation expenses will be provided.

Please address correspondence or send detailed résumé (including CV, remuneration required, date of availability) to

IMMUNO AG Personnel Department Dr. Elisabeth Pullez A-1221 Vienna, Industriestraße 67



OUR SUCCESS IS YOUR OPPORTUNITY!



### Transgenic Mice and Gene-Targeting Positions Institute of Molecular Biology (IMB) Academia Sinica, Taipei, Taiwan

The Institute of Molecular Biology (IMB) of Academia Sinica, Taipei, is seeking applications for one Tenure Track Principal Investigator and two **Tenure Track** Senior Research Associates with expertise in transgenic mice/gene targeting technologies. and/or mouse molecular pathology. The Principal Investigator should have a minimum of 2 years of postdoctoral research experience and posses excellent communication skills. He or she is expected to manage and direct the recently established transgenic mice/gene targeting facility. Senior Research Associate candidates are expected to have a Ph.D. or equivalent degrees, although highly qualified individuals without Ph.D. degrees will be considered. While candidates for the Senior Research Associate positions should have general familiarity with all aspects of transgenic mice and gene targeting technologies, actual experience in microinjection is highly desirable. They will work closely with the Principal Investigator to collaborate with, and provide technical and knowledge support to, several IMB research groups.

IMB is a rapidly growing and vibrant research institute equipped with state-of-the-art equipments including the microinjection apparatuses and a newly constructed small animal facility within which the transgenic and gene targeting research will be performed.

Deadline for application is November 15, 1996. First-round candidates will be selected by December 15. The interview process and final decision are expected to be completed by February 28, 1997.

Interested individuals should send curriculum vitae, a description of past research accomplishments and future research interests, and three letters of reference by November 15, 1996, to Search Committee, c/o Fei Chen, Institute of Molecular Biology, Nankang, Taipei, Taiwan 11529, ROC. Fax: 886-2-782-6085.



The Institute invites applications for leaders of independent research groups. Within its Otto-Warburg-Laboratorium, the Institute provides appropriate laboratory space for these groups, funds for laboratory set up and operation, as well as salaries for one research assistant and one technician per group. Fellowships for pre- and postdoctoral coworkers will be negotiated. The groups have access to all common facilities of the Institute.

Group leaders will be appointed for a five-year period. The salary is at the C 3 level of the German civil service scale (approximately DM 90,000 per annum). The applicants should not be older than 35 years. They should have postdoctoral experience and an outstanding record in one of the following areas:

- · Genetics of prokaryotes or lower eukaryotes
- Epigenetics, DNA-methylation
- Bioinformatics
- Genome analysis in humans and other vertebrates
- Gene and protein function in health and disease
- Combinatorial molecular genetics

Applicants should submit their CV, a list of publications, and a short description of their future research objectives not later than November 15, 1996, to:

Professor Dr. Thomas A. Trautner Max-Planck-Institut für Molekulare Genetik Ihnestraße 73, D-14195 Berlin, Germany

## MOLECULAR THERAPEUTICS RESEARCHER

The University of Calgary Cardiovascular Research Group invites applications for a full-time academic position at the Assistant Professor level or higher to develop a vigorous independent research program within a multidisciplinary research environment and to participate in graduate student education.

Qualifications include a PhD or MD, at least three years of postdoctoral training, demonstrated research excellence, and an interest in molecular analysis or molecular therapeutics as it relates to cardiovascular biology. Eligibility for licensure in the Province of Alberta is also required if the selected individual will be providing patient care.

The selected candidate must compete successfully for salary and operating support from the Alberta Heritage Foundation for Medical Research and/or the Medical Research Council of Canada, and will have 75% of time protected for research.

In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. The University of Calgary is committed to Employment Equity.

Please submit a curriculum vitae, a summary of research interests, and reprints of two recent publications, and also arrange to have three letters of reference sent directly, by November 30, 1996, to:

Dr. Henry J. Duff Selection Committee Cardiovascular Research Group The University of Calgary 3330 Hospital Drive N.W. Calgary, Alberta, Canada T2N 4N1

www.ucalgary.ca

### THE UNIVERSITY OF MICHIGAN CLINICIAN SCIENTIST

The Department of Oral Medicine/Pathology/Surgery of the University of Michigan School of Dentistry invites applications for a tenure-track faculty position in the Division of Oral and Maxillofacial Pathology at the Assistant or Associate Professor level. The Department seeks individuals who have demonstrated excellence in research and a strong background in diagnostic surgical and/or clinical oral pathology.

We are seeking outstanding individuals who are using cellular and molecular approaches to examine basic mechanisms of disease. We are particularly interested in individuals with interests including, but not limited to, angiogenesis, cell adhesion molecules, epithelial stem cell biology, extracellular matrix, oral carcinogenesis, programmed cell death, and signal transduction. Applicants must be either board eligible or certified by the American Board of Oral Pathology.

Candidates should have sufficient research experience to demonstrate either significant accomplishment or outstanding promise. Candidates will be expected to establish and maintain an extramurally funded research program and participate in the D.D.S., postgraduate dental, and Ph.D. teaching programs. Applicants should submit, by March 1, 1997, a curriculum vitae, a description of current and long range research plans, and a list of five references who are able to provide evaluations of previous accomplishments as well as potential for independent research and teaching excellence to:

> Peter J. Polverini, D.D.S., D.M.Sc. Professor and Chair Department of Oral Medicine/Pathology/Surgery University of Michigan School of Dentistry 1011 N. University, Rm. 5217 Ann Arbor, MI 48109-1078 Phone: (313) 936-2191 Fax: (313) 763-5714 Email: neovas@umich.edu

The University of Michigan is an equal opportunity, affirmative action employer and encourages women and minorities to apply.

### **GLOBAL CAREER OPPORTUNITIES**

# Research Fellow in Structural Biology

ST. ANDREW

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**NIN** 

A two year tenable post concerning the use of structural (X-ray, NMR & molecular modelling) and molecular biology to target important biological processes related to disease. We are particularly interested in cellular signalling and enzyme catalysis. We have a number of international and local collaborations. You must have protein purification experience, experience in either cloning, molecular modelling and protein crystallography would be beneficial but are not essential. The laboratory has a dedicated rotating anote image plate system and Perseptive SPRINT (similar to FPLC). You will have submitted your PhD thesis before starting work in St Andrews.

Salary will be on the appropriate point of the 1A scale for Research Staff ie £14,317 - £21,519 per annum.

Informal enquities to Dr Jim Naismith, e-mail: naismith@st-andrews.ac.uk, tel: 01334 463792 (24hrs), fax: 01334 463808.

Application forms and further details from Personnel Services, University of St Andrews, College Gate, North Street, St Andrews, Fife KY16 9AJ (tel: 01334 462571; fax: 01334 462570; e-mail: Jobline@st-andrews.ac.uk). Applications cannot be made by e-mail. Please quote ref ML107/ACH. Closing date: 25 October 1996.

The University operates Equal Opportunities and No Smoking Policies.

## KLINIKUM RECHTS DER ISAR DER TECHNISCHEN UNIVERSITÄT MÜNCHEN

### Technical University Munich Institute for Experimental Surgery Gene Therapy Program

The Institute of Experimental Surgery of the Technical University of Munich is launching a program in Gene Therapy in conjunction with the Departments of Urology, Pathology, Gynaecology, and Nuclear Medicine. Ample, newly renovated space, equipment, and technical personnel, plus substantial financial base, are being secured for this program. We are seeking scientists at various levels (**postdoctoral** and **senior scientists**) to work in an established facility in the center of Munich.

Several positions for scientists at the postdoctoral and senior scientist level are open. Successful candidates will work on the development of new strategies for gene transfer into various cell types toward the application of gene therapy. Experience in nonviral and viral transfer technology (retroviral, adenoviral, and AAV) is highly desirable, although not essential. Also, candidates with experience in cellular tumorimmunology are encouraged to apply. Salaries will be according to the BAT scale or from independent grants.

Candidates should have a Ph.D. or M.D. degree with a proven record of research in those fields and interest in gene therapy. Applicants should contact directly or send their curriculum vitae, a one-page summary of their research interest, and the names and phone numbers of three references to:

Univ. Prof. Dr. med. Bernd Gänsbacher Director, Institut für Experimentelle Chirurgie Technischen Universität München Ismaningerstraße 22, 81675 München Germany or

Tel: (+049 +89) 4140-4451 Telefax: (+049 +89) 4140-4476 email address: tbi1201@lrz.tu-muenchen.de

## CELL GENESYS & ABGENIX Careers

As a leading research and development company, **CELL GENESYS** is genetically engineering the human immune system to create innovative therapies for serious diseases. Currently, we are seeking the following professionals to join us in the beautiful San Francisco Bay Area.

> SR. RESEARCH ASSOCIATE Molecular Biology/ Molecular Virology

PROCESS DEVELOPMENT ASSOCIATE T Cell Production

RESEARCH ASSOCIATE T Cell Immunology

ASSOCIATE SCIENTIST Chimeric Receptor Technology

We also have openings available at our subsidiary, ABGENIX, focused on therapeutic human monoclonal antibodies.

SENIOR RESEARCH ASSOCIATE In Vivo Therapeutics

> SENIOR SCIENTIST Human Antibodies

PROJECT MANAGER Product Development & Toxicology

We offer a competitive salary, excellent benefits and equity participation in one of the world's most desirable locations. For immediate consideration, send your resume with cover letter telling us about yourself to: Human Resources, Cell Genesys, Inc., '322 Lakeside Dr., Foster City, CA 94404. We are an equal opportunity employer.



CELL GENESYS

🔥 Abgenix

**SHAMAN** Pharmaceuticals, Inc., a South San Franciscobased growing company engaged in the discovery and development of novel plant-derived medicines for diabetes and virology, seeks a Scientist to be responsible for the development of methods for the production, purification, fermentation, and scale up validation of new processes for bulk drug substances, technologies and products. A key responsibility will be the process optimization, primarily through outside liaisons and contractors, of Nikkomycin Z, an orally administered drug to treat fungal infections.

### **PROCESS DEVELOPMENT SCIENTIST**

This position reports to the Senior V.P. of Development and requires a Ph.D. in Microbiology or a related scientific discipline with at least 5 years of industrial experience in a pharmaceutical or biotechnology environment with direct experience in fermentation. Demonstrated ability to interact productively and to effectively influence colleagues and senior managers is strongly preferred.

SHAMAN offers a competitive salary and benefits package including stock option opportunities and a multidisciplinary group environment. Please respond by mailing your C.V. to SHAMAN Pharmaceuticals, Inc., c/o 221 Main St., Suite 545, San Francisco, CA 94105 or fax to (415) 908-1823. EOE.

NATIONAL CANCER INSTITUTE DIVISION OF EXTRAMURAL ACTIVITIES ROCKVILLE, MARYLAND Opening Date: September 23, 1996 Closing Date: November 22, 1996 Announcement Number: CA-96-009 DEPUTY DIRECTOR, DIVISION OF EXTRAMURAL ACTIVITIES

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ARMACEUTICALS, INC

The Division of Extramural Activities (DEA), National Cancer Institute (NCI), National Institutes of Health (NIH), is seeking candidates for the position of Deputy Director. The selected scientist will be responsible for the day-to-day scientific management of the Division, which conducts the scientific review and evaluation of grant and cooperative agreement applications and contract proposals in response to the programmatic initiatives of the NCI. The extramural research funded by the NCI supports a broad program of activities designed to increase knowledge of the causes, prevention, control, diagnosis, and treatment of cancer. The Division has an annual budget of approximately \$10 million and a staff of approximately 95 persons.

This is a Civil Service position in the Senior Executive Service (SES) with annual salary compensation between \$100,526 and \$122,688 per annum. In addition, physicians may be eligible for a Physicians Comparability Allowance of up to \$20,000 per annum (if applicable). (Applicants alternatively may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service.) The individual selected, if not presently in the SES, must serve a one-year probationary period.

Applicants must meet the minimum qualification requirements. Applicants must further meet established mandatory professional/technical and managerial/executive requirements. Applicants will be further evaluated on the degree to which they possess additional desirable qualifications in the areas of professional/technical qualifications, managerial/executive qualifications, scientific reputation/peer recognition, training and education, and honors and awards. A copy of the requirements may be obtained by contacting Ms. Toni McKeown in the Human Resources Management and Consulting Branch, NCI, at (301) 402-2812.

Applications/resumes are to be sent to the above individual at:

National Cancer Institute (0097), Human Resources Management and Consulting Branch, 6120 Executive Boulevard, EPS/Room 550, Rockville, Maryland 20852

A current curriculum vitae and bibliography must accompany all applications/resumes for entrance into the SES. In addition, applicants are encouraged to complete the DHHS Applicant Background Survey form (completion of this form is voluntary). You may contact Ms. McKeown on the above number to obtain a copy of this form. Applications will be accepted for a period of 60 days following the opening date of the announcement.

Public Health Service Commissioned Officers wishing to enter the SES must follow the above procedures. Officers interested in performing the duties of the position within the Commissioned Corps may submit a resume to the above address.

NCI is an Equal Opportunity Employer

### GEORGIA SOUTHERN UNIVERSITY DEPARTMENT OF CHEMISTRY

Assistant Professor. Two tenure track faculty positions, one in organic and the other in analytical, to begin September 1, 1997. Applicants must have command of written and spoken English, demonstrated teaching and research abilities, and a commitment to teaching at the undergraduate level. Salaries dependent upon qualifications. Organic chemist--area open, must have an earned Ph.D. in organic chemistry by the time of appointment. The successful candidate will teach general and organic chemistry, and will be expected to develop an effective research program in collaboration with undergraduate students. Analytical chemist-teaching and research interests to complement existing strengths in electrochemistry and environmental chemistry preferred. Must have an earned Ph.D. in analytical chemistry by time of appointment. The successful candidate will teach general and analytical chemistry, and will be expected to develop an effective research program in collaboration with undergraduate students. Applicants for either position should send a current curriculum vitae, unofficial copies of undergraduate and graduate transcripts, a statement of teaching philosophy, and a description of proposed research and arrange to have three letters of reference sent to Dr. Bill Ponder, Department of Chemistry, Georgia Southern University, Statesboro, GA 30460-8064. Postmark deadline for completed applications is October 30, 1996. The names of applicants and nominees, resumes, and other general non-evaluative information are subject to public inspection under the Georgia Open Records Act. GSU, a regional university in the University System of Georgia, is an EO/AA institution. Persons who need accommodations in the applications process under ADA should contact the search chair.

## SCIENTIST (Austin, TX)

CarboMedics, Inc., a leading manufacturer of cardiac proprietary heart valves and components, has an outstanding opportunity for a research-oriented professional with a thorough understanding of biochemistry, polymer chemistry, chemical engineering, tissue engineering, chemical modification or vascular graft technologies. In this position, you'll plan, conduct and report on lab experiment/test results, develop new materials, technologies and processes through research, interface with interdepartmental personnel to resolve R&D issues and publish peer-reviewed technical articles in appropriate scientific journals.

We require a minimum of a Ph.D. degree in a scientific discipline or M.S. degree and 4 years' relevant experience or B.S. and 7 years' experience, PC proficiency (WP, spreadsheets, graphics software) and working knowledge of Good Manufacturing Processes as well as ability to apply regulatory requirements to manufacturing process. You must also have experience in collagen-containing materials, hydrogels or composites and familiarity with modification, crosslinkage or stabilization of such materials.

CarboMedics, Inc. offers a highly competitive salary and full benefits along with an outstanding community in the beautiful Texas hill country that provides limitless recreational and cultural opportunities. For confidential consideration, please fax or send your resume to: CarboMedics, Inc., 96143EA, 1300 East Anderson Lane, Austin, TX 78752. FAX: (512)435-3306. No Phone Calls Please. EEO/ AAP/MFDV.

SIUE BOTANIST The Department of Biological Sciences, Southern Illinois University at Edwardsville, invites applications for a tenure-track position in plant systematics at the Assistant Professor level. We seek applicants with broad training in botany and expertise in evolutionary biology. We are particularly interested in candidates who take a broad view of plant systematics, but who apply molecular techniques to problems in evolution, conservation biology, or other related fields. The successful candidate must have a commitment to general education, interdisciplinary education, and working with undergraduate students. Teaching responsibilities include a course in modern plant systematics, shared responsibility for teaching general botany for biology majors, and participation in teaching botany/biology undergraduate and graduate courses. Candidates should exhibit potential for independent and innovative research and teaching, and a willingness to support the Ecology, Evolution and Environment specialization in biology and the Environmental Studies Program. Qualifications: a Ph.D. in botany or biology plus teaching and postdoctoral experience. To apply, send a letter of application with a statement of your teaching and research interests, curriculum vitae, university transcripts, names and addresses of three persons who will serve as references, and reprints of no more than three publications to Chair, Botanist Search Committee, Department of Biological Sciences, Box 1651, SIUE, Edwardsville, IL 62026-1651. Review of applications will begin November 15, 1996. As an affirmative action employer. SIUE offers equal employment opportunity without regard to race, color, creed or religion, age, sex national origin, or disability.



Research Associate/Postdoctoral position available immediately in the Musculo skeletal Research Center in the Department of Orthopaedic Surgery. Research emphasis is on characterization, mechanisms, and treatment of arthritis.

Qualifications include recent Ph.D. and/or completion of postdoctoral fellowship with experience in molecular biology, protein biochemistry, cell biology, and immunology. Work will be extended to human tissues. Three-year funding is available with the potential for a permanent position and academic appointment at New York University School of Medicine.

Candidates should send curriculum vitae and three letters of reference to: *Dr. Paul Di Cesare, Director, Musculoskeletal Research Center, Department of Orthopaedic Surgery.* 



The Department of Microbiology and Molecular Genetics and the Department of Medicine at the University of California, Irvine are jointly seeking applicants for a faculty position at the Assistant or Associate Professor level, depending upon qualifications. As part of our ongoing effort to expand our program in molecular pathogenesis, we are soliciting applications from individuals who have demonstrated superior talent and productivity in the area of molecular mechanisms of microbial pathogenesis. His/her previous work should have been judged by peer review to have been scientifically rigorous and medically relevant, and he/she should have been successful in obtaining sufficient funds from peer-reviewed grants to support these efforts. The latter can include postdoctoral fellowship support for Assistant Professor candidates.

Candidates must have an M.D./Ph.D. or M.D., and board certification in internal medicine and board eligibility in infectious diseases are required. The successful candidate will have some teaching and clinical responsibilities but will have considerable time available for accomplishing research goals and participating in researchrelated activities.

Please send curriculum vitae, summary of research interests, and names of three references to:

> Dr. Alan G. Barbour Search Committee Chair Department of Microbiology and Molecular Genetics College of Medicine University of California Irvine, CA 92697-4025

The University of California at Irvine is an equal opportunity/affirmative action employer. Women and minorities are encouraged to apply.

### FELLOWSHIPS IN MATHEMATICS AND MOLECULAR BIOLOGY

The Program in Mathematics and Molecular Biology has graduate and postdoctoral fellowship support available for research at the interface between mathematics and molecular biology. Some current topics include topology and sequence analysis of DNA, molecular dynamics of proteins and nucleic acids, phylogenetic comparison, RNA structure, and algorithms for molecular structure prediction. Other areas are also appropriate. Fellowships can be held at any university, college, or research institute in the United States. Non-US citizens are eligible to apply. Application deadline: February 3, 1997. Women and minorities are encouraged to apply. Request Application packet from: PMMB, 103 Donner Lab, #3206, University of California at Berkeley, Berkeley, CA 94720-3206. Complete packet available via email:

sylviaj@violet.berkeley.edu.

### Neuroscience - Anatomy Faculty Position

The Department of Anatomical Sciences has a tenure-track position available for appointment beginning on or before July 1, 1997. Applicants should hold a Ph.D., M.D. or equivalent degree. Appointment will be made at the Associate or Full Professor level, although advanced Assistant Professors will be considered. The candidate is expected to have a funded and established independent research program in Neuro-science. Opportunity exists for joint affili-ation with the Oklahoma Center for NeuroSciences (OCNS). Teaching responsibilities will be in the team-taught neuroscience course for professional and graduate students. Candidates should have sufficient experience in teaching neuroscience to assume an immediate and effective role in the course. Applicants should submit curriculum vitae, with an accompanying summary of past and proposed research interests, teaching experience, and names of three references. Review of applicants begins October 1, 1996 and will continue until the position is filled. Send all materials to:

Raymond E. Papka, Ph.D. Professor and Chairman Department of Anatomical Sciences University of Oklahoma Health Sciences Center Post Office Box 26901 Oklahoma City, Oklahoma 73190 (405) 271-2377 Fax (405) 271-3548 email: raymond-papka@uokhsc.edu "This position is different from and in addition to that described in Science August 30, 1996. Equal Opportunity/Affirmative Action Employer

### FACULTY POSITION Macromolecular NMR Spectroscopy

The Center for Advanced Research in Biotechnology (CARB) is seeking to fill a faculty position in macromolecular NMR spectroscopy. Applicants using and developing multidimensional solution NMR methods to study structure and dynamics of biological macromolecules are invited to apply. The successful candidate will be expected to develop an independent, externally funded research program and to interact with other CARB scientists involved in high field NMR spectroscopy, physical biochemistry, structural immunology, protein folding, stability, modeling and engineering, macromolecular crystallography, and computational chemistry.

CARB is a research center of the National Institute of Standards and Technology and the University of Maryland Biotechnology Institute devoted to fundamental problems of macromolecular structure, function, and engineering. Interested candidates should send a curriculum vitae and a summary of research interests and plans, and should arrange for three letters of reference to be sent to:

Faculty Search Committee, Center for Advanced Research in Biotechnology, University of Maryland Shady Grove, 9600 Gudelsky Drive, Rockville, MD 20850.

Review of applications will begin November 1, 1996. CARB is an Equal Opportunity/Affirmative Action Employer. Women and minority candidates are encouraged to apply.

## PROTEIN DESIGN LABS

## WHERE THE FUTURE TAKES SHAPE

Protein Design Labs' interdisciplinary approach to drug discovery integrates computer-based design with molecular biology, immunology and protein chemistry. Join us for this exciting opportunity to cooperate with an active research team developing novel drug candidates in the inflammatory disease area.

## **POSTDOCTORAL FELLOW**

The selected candidate will be responsible for characterizing the leukocytes and cell adhesion mechanisms involved in animal models of inflammatory bowel disease. Applicants should have a strong background in immunology or infectious disease and be familiar with knock-out or transgenic mouse models. A Ph.D. and experience in cellular immunology, flow cytometry, and immunohistochemical techniques are required.

PDL's fast-paced, highly challenging environment offers superior research opportunities, competitive salaries, a comprehensive benefits package, and a very attractive location in the San Francisco Bay Area. Please send your resume to: Human Resources, Protein Design Labs, Inc., 2375 Garcia Ave., Mountain

View, CA 94043, fax 415/962-0437. EOE.

FULFILLING THE PROMISE OF ANTIBODIES.

## SCIENTIFIC STAFF

The Department of Biology is seeking biological oceanographer to join scientific staff. The position is open to all disciplines of biological oceanography and at all levels from Assistant to Senior Scientist. Major research interests of the staff include animal physiology, benthic biology, bioacoustics, biochemistry, biogeochemistry, cetacean behavior, environmental toxicology, ichthyology, mathematical ecology, microbial ecology, bacteriology, phytoplankton ecology and zooplankton biology. Ph.D and postdoctoral experience in one of the above or related fields required. Candidate must maintain a funded research program and participate in our graduate program in Biological Oceanography. Applicants should send letter of intent, resume and names of three references by November 15, 1996 to: Woods Hole Oceanographic Institution, Box 54SFC4, MS #15 Woods Hole, MA 02543.

WOODS HOLE OCEANOGRAPHIC INSTITUTION EOE/M/F/D/V.



### **RESEARCH ASSOCIATE**

Postdoctoral position available immediately at the Center for Advanced Research in Biotechnology (CARB) to study the interactions of protein folding intermediates with chaperones. Applicants must have background in biothermodynamics or rapid kinetics. Some experience in protein purification is useful.

CARB is a research center of the University of Maryland Biotechnology Institute and the National Institute of Standards and Technology devoted to fundamental problems of macromolecular structure, function, and engineering. Interested applicants should send their curriculum vitae and three letters of reference to:

Physical Biochemist Postdoctoral Center for Advanced Research in Biotechnology University of Maryland Shady Grove 9600 Gudelsky Drive Rockville, MD 20850

Review of applications will begin October 6, 1996. CARB is an Equal Opportunity/Affirmative Action Employer. Women and minority candidates are encouraged to apply.

### DEAN

### School of Biological Sciences University of California, Irvine

The University of California, Irvine, invites applications and nominations for the position of Dean of the School of Biological Sciences. We seek an individual with an outstanding reputation within the scientific community who will bring vision and innovative leadership to the School. Candidates must have a demonstrated commitment to academic excellence to further advance the School's standing in research, undergraduate and graduate education, and service. The scholarly achievements of this individual should be appropriate for an appointment as a Full Professor in one of the departments in the School. The School of Biological Sciences comprises four academic departments: Development and Cell Biology, Ecology and Evolutionary Biology, Molecular Biology and Biochemistry, and Psychobiology.

Applications and nominations will be received until the position has been filled. However, the screening process will begin immediately, and individuals are encouraged to apply prior to November 15, 1996.

Nominations and expressions of interest, along with a curriculum vitae and the names and addresses of three referees, should be submitted to:

Professor Thomas Poulos Chair, Biological Sciences Dean Search University of California, Irvine `509 Administration, Irvine, CA 92697-1000.

The University of California, Irvine is an equal opportunity employer committed to excellence through diversity.



New Basic Science Position University of Southern California A Search for an Assistant or Associate Professor Sponsored by the Department of Orthopedic Surgery

The Institute for Genetic Medicine and the Department of Orthopedic Surgery are seeking candidates with special research interests in molecular biology and genetics as they relate to human disease to develop an independent research program. The successful candidate will have a joint appointment in an appropriate basic science department of the School of Medicine. Candidates with a wide range of interests will be considered, including research activities involving development of models for human genetic disease, development of gene transfer vehicles including viruses and genetically engineered cells, and the molecular genetics and biology of stem cells and cytokines. Candidates whose research interests relate to problems of bone infection, inflammation, growth, or regeneration will be given special consideration. Clinically based or translational research could be an important component of the candidate's research program. The faculty appointee must have a Ph.D. or M.D. degree and will be expected to interact with orthopedic surgical faculty and fellows in addition to developing an independent research program and participating in both medical and graduate student teaching programs. Faculty members will be housed within the new Institute for Genetic Medicine research facility. Candidates eligible for an associate professorial appointment should demonstrate evidence of sustained extramural funding.

The University of Southern California and its Medical School have made a major commitment to building a program in gene therapy and genetic medicine. The faculty members will play a major role in defining the future expansion of the Institute for Genetic Medicine.

Candidates should send their curriculum vitae and bibliography and a statement of research and teaching interests, including a description of how their activities would interface with an orthopedic surgery research program. Send these materials and arrange to have three letters of reference sent to Laurence H. Kedes, M.D., Executive Director, Institute for Genetic Medicine, University of Southern California, 2011 Zonal Avenue, HMR413, Los Angeles, CA 90033.

### ASSISTANT PROFESSORS University of Nevada, Las Vegas

Applications in the following disciplines are sought for three tenure-track faculty positions in the Department of Biological Sciences:

Genetics: The successful candidate will be expected to develop a research program using a genetic approach to address biological problems; teaching duties will include an undergraduate genetics course and upper division or graduate level courses.

Cellular Biology: The successful candidate will be expected to develop a research program in some aspect of cell biology; teaching duties will include a lower division cell biology course and upper division or graduate level courses.

Microbial Physiologist: The successful candidate will be expected to develop a research program with a specific focus on prokaryotes, at the molecular or physiological level; teaching duties will include microbial physiology, rotation into general microbiology, and a graduate level course.

Qualifications: Successful candidates will have a Ph.D. in an appropriate area of biological sciences. Postdoctoral experience is preferred. Expectations include a strong commitment to research, teaching, and service. Responsibilities include development of a productive research program plus teaching of undergraduate and graduate courses.

The University: UNLV is a growing university of 20,000 students that is situated in a community of over one million residents. The surrounding area is one of the most picturesque in the Southwest, with year-round recreation and cultural opportunities.

The Department: The Department of Biological Sciences consists of 25 faculty members engaged in research at all levels of biological organization. The Department has 500 undergraduate majors and an expanding graduate program that offers Masters and Ph.D. degrees. Further information can be obtained on the Department's home page (http:// www.nscee.edu:80/unlv/Colleges/College\_of\_Science\_and\_Math).

To Apply: Letters of application should contain a curriculum vitae and a statement of the applicant's experience and philosophy in the areas of teaching and research. Three letters of recommendation should be sent separately. All materials should be addressed to: Dr. Penny S. Amy, Chair, Department of Biological Sciences, University of Nevada, Las Vegas, Las Vegas, NV, 89154-4004. Consideration of completed applications will begin October 30, 1996, and continue until positions are filled. Positions are contingent upon funding availability.

UNLV is an Equal Opportunity Employer committed to cultural diversity.

### SENIOR NEUROLOGIST FACULTY POSITION IN ALZHEIMER'S DISEASE RESEARCH Institute for Brain Aging and Dementia College of Medicine, Department of Neurology School of Biological Sciences UNIVERSITY OF CALIFORNIA, IRVINE

Applications are invited for a tenured, Senior Neurologist faculty position dually appointed in the College of Medicine, Department of Neurology, and in the School of Biological Sciences, Department of Psychobiology. This individual is expected to take a leadership role in the Alzheimer's Disease Program that is designated both as an Alzheimer's Disease Research Center and as an Alzheimer's Disease Diagnostic and Treatment Center (State of California, DHHS), structured within the Institute for Brain Aging and Dementia. The successful candidate will be one who demonstrates appropriate leadership skills, including the ability to maintain effective interactions over a range of basic science and clinical disciplines related to the study of Alzheimer's disease. Candidates should have a record of outstanding research accomplishment as evidenced by national and international recognition, appropriate funding record, and proven ability to train graduate and postdoctoral researchers. Examples of areas of research foci might include neuro-imaging applications, dementia sub-type analyses, and/or biological markers of dementia. The level of appointment is commensurate with the credentials of the successful candidate.

Candidates holding an M.D. degree and board certification in Neurology are invited to apply by sending a letter of interest, a curriculum vitae that includes a record of teaching and research experience, and the names and addresses of three referees to: University of California Irvine, Dr. Carl W. Cotman, Institute for Brain Aging and Dementia, Biological Sciences II, Room 1305, Irvine, CA 92697-4540. Refer to Position #96-C.

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## Sr./Principal Scientist Research Pharmacokinetics

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In this important position, you will lead a team capable of providing pharmacokinetic information to explore the time dependent distribution of experimental therapeutic agents in ocular tissue, understand the influence of ophthalmic drug delivery systems, and answer questions related to transport mechanisms, formulations, and structural changes in classes of novel compounds. You should have hands-on analytical expertise developing alternative methods for HPLC, radio analytical techniques, and the ability and interest in modeling pharmacokinetic/pharmacodynamic effects on drug concentrations in tissue. Experience assessing specialized polymers used in drug delivery also preferred.

The successful candidate will have a Ph.D. in Pharmaceutics, Pharmacokinetics, or related field, and at least 7 years applicable industrial/post doctorate experience. Excellent communication, interpersonal and project management skills are also required.

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## POSITION IN X-RAY CRYSTALLOGRAPHY

### NATIONAL INSTITUTE OF

ENVIRONMENTAL HEALTH SCIENCES NATIONAL INSTITUTES OF HEALTH



The Laboratory of Structural Biology, National Institute of Environmental Health Sciences, National Institutes of Health, invites applications for a position in the area of X-ray crystallography. The position may be filled at either a tenured senior level or a tenure-track junior level. While applicants will be considered in all areas related to the structure of biological macro-molecules, we are particularly interested in developing a strong group to study the structure and function of proteins involved in nucleic acid transactions and/or signal transduction pathways. Salary will be commensurate with experience and qualifications of the candidate. There is also the possibility of hiring under the aegis of the newly created (Sylvio Conte) Senior Medical Research Services (SBRS). Excellent space and research support are available. The level of support will be commensurate with the rank at which the successful candidate is hired.

For additional information concerning this position, contact Dr. Jan Drake, Search Committee Chair, at 919-541-3361, or Dr. Thomas Kunkel, Chief, Laboratory of Structural Biology, at 919-541-2644. Applications from women or minority groups are particularly welcome. Interested parties should submit a curriculum vitae, a list of publications, reprints of up to five representative publications, a summary of past research, a plan for future research, and the names and complete addresses (including phone and email) of three references. PLEASE SUBMIT COMPLETED APPLICATIONS BY DECEMBER 2, 1996 TO:

Ms. Dara Trupe Human Resource Management Branch (HNV96-15) National Institute of Environmental Health Sciences P. O. Box 12233, Maildrop 1-01 Research Triangle Park, NC 27709 (919) 541-7513

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## CELLULAR AND MOLECULAR NEUROBIOLOGY

**Postdoctoral Positions** 

Postdoctoral positions are available at the Worcester Foundation for Biomedical Research to study cellular and molecular aspects of neurobiology. These positions are in part supported by an NIH Training Grant (R. Vallee, P.I.). The faculty and their research interests are:

MICHELE JACOB: Molecular mechanisms of neuronal synapse formation; viral-vector mediated gene transfer *in vivo*.

**DANIEL KILPATRICK:** Transcriptional regulation of neuronal differentiation; TrkA promoter regulation in neurons and neuroblastoma cells.

STEPHEN LAMBERT: Role of membrane-cytoskeleton interactions during axonal outgrowth and myelination.

JOSÉ LEMOS: Stimulus-secretion coupling at nerve terminals; mechanisms modulating neurotransmitter release.

ROBERT O'CONNELL: Neurobiology of quality perception in olfaction including stimulus detection, transduction, coding and behavior.

ALONZO ROSS: Molecular analysis of Trk and low-affinity NGF receptors, signal transduction, stem cells, neural tumors and differentiation.

**RICHARD VALLEE:** Microtubule motor proteins; synaptic GTPase dynamin. **DAVID WOLF:** Photochemical analysis of TrkA and low affinity NGF receptor interactions.

ZUOSHANG XU: Neurofilaments, SOD1 and motor neuron disease.

We are a private, basic research institute on a suburban campus 10 minutes from the University of Massachusetts Medical Center and 45 minutes west of Boston.

Send curriculum vitae and names of references to the faculty member(s) of interest, c/o: Human Resources, Worcester Foundation for Biomedical Research, 222 Maple Avenue, Shrewsbury, MA 01545, USA. For more information visit our web site at http://www.wfbr.edu/. EOE/AV/M/F/H.



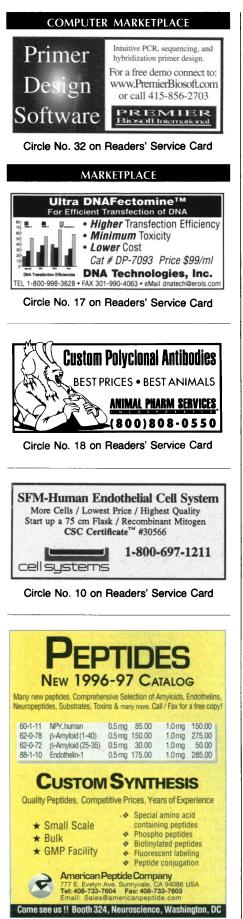
WORCESTER FOUNDATION FOR BIOMEDICAL RESEARCH

Structural/Functional Studies of Cells and Cellular Components

The W.M. Keck Institute for Cellular Visualization at Brandeis University seeks candidates for two tenuretrack W.M. Keck assistant professorships. The newly formed Institute, made possible by a generous award from the W.M. Keck Foundation, seeks biophysical chemists, biochemists, biophysicists, or structural biologists who will advance our ability to visualize the macromolecular machinery of life by the application of emerging technologies to important biological problems. The Institute is particularly interested in developing high resolution electron crystallography of membrane proteins. We are equally interested in applications of electron tomography or X-ray crystallography to macromolecular assemblages and of innovative light, probe or other microscopies to biological structure and function.

Candidates are expected to have a PhD (or the equivalent) and post doctoral experience. Additional requirements are a strong record of research accomplishments, a commitment to developing an independent and creative research program, and skill in teaching at both the graduate and undergraduate levels. The successful candidate will be appointed in an appropriate academic department(s). Prospective candidates should send a curriculum vitae, a list of publications, a statement of research plans, and should arrange for three letters of recommendation to be sent to: Prof. David DeRosier, W.M. Keck Institute for Cellular Visualization, Rosenstiel Basic Medical Sciences Research Center, Mail Stop 029, Brandeis University, 415 South Street, P.O. Box 9110, Waltham, MA 02254-9110. Applications from women and members of minority groups are especially welcome. EOE/AA. A non-smoking environment.

Consideration of complete applications will start after November 1, 1996 and will continue until the positions are filled, although candidates are urged to submit completed applications as soon as possible.

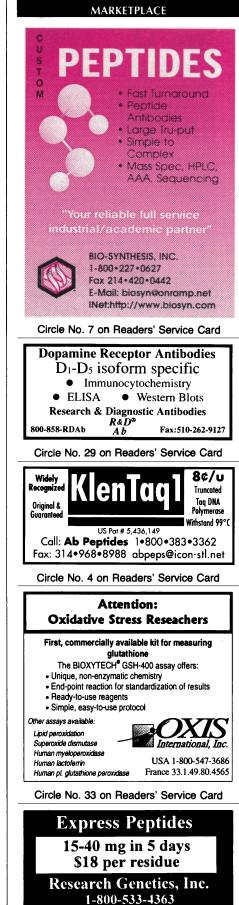


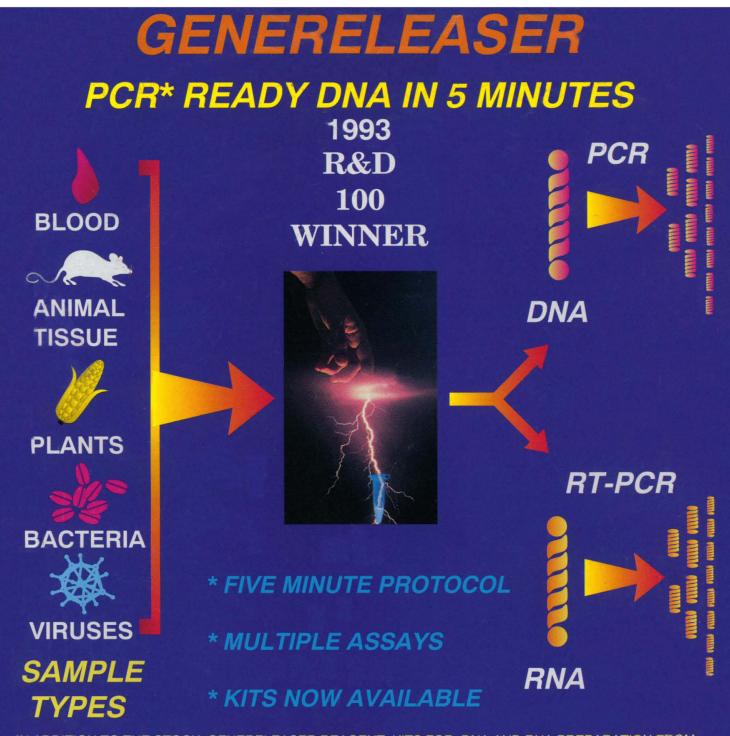
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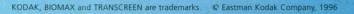
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