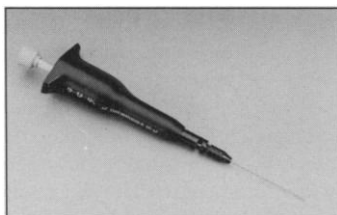


## Fusion Protein Purification

In the PheBo-System for fusion protein cloning and purification, the protein of interest is cloned next to the leader protein  $\beta$ -lactamase. The expressed fusion protein remains in the cytoplasm or is released into the periplasm. The leader protein is cut off by a site-specific endoproteinase, which also cleaves inclusion bodies. Two passages through the PheBo-affinity column yield the pure protein of interest, while  $\beta$ -lactamase and the endoproteinase remain on the column. **MoBi-Tec. Circle 138.**

## Microinjection Pipette

The manual Oocyte Microinjection Pipette with nonrotating plunger eliminates tip wobble and provides precise cell penetration



for deposition of DNA. Volumes of 30 nl or more can be injected with reproducible accuracy. Minimal or no overshoot of oil interface is ensured. **Drummond Scientific. Circle 139.**

## Plasmid Map Drawing for the Macintosh

MacPlasmap version 2 is a Macintosh program to facilitate the drawing of circular and linear plasmid maps. Special tools are provided for fast entry and accurate placement of restriction sites and genes on a map. Sites and genes can be drawn with various styles, colors, patterns, and symbols. Circular maps can be rotated and converted to linear maps at any point of the map. The ability to cut, copy, and paste map features within or between maps and to delete, insert, and invert

map regions allows new maps to be easily constructed from pre-existing ones. To aid fast entry of map features, MacPlasmap can import sites from PICT files generated from other DNA analysis programs and read genes and other features from feature tables of GenBank and EMBL sequence files. **CGC Scientific. Circle 140.**

## Technical Plotting for Windows

Spyglass Plot technical plotting software is now available for Windows. The program can generate line plots, double-Y plots, color scatter plots, and parametric plots. The plots can be easily edited with different line types, colors, symbols, numbers, curve fitting, and error bars. Users can quickly add labels, scales, legends, and titles. Results can be printed by high resolution PostScript printers or exported as EPS and HDF files. **Spyglass. Circle 141.**

## Monoclonal Antibodies

The monoclonal antibody (mAb) Anti-BrdU, clone BU-33, reacts specifically with bromodeoxyuridine incorporated into DNA or coupled to a protein carrier. The antibody recognizes BrdU in the nuclei of formalin-fixed, paraffin-embedded tissue sections of animals treated with in vivo administration of BrdU. It can be used in studies to identify DNA synthesis in cells by the detection of BrdU incorporation using immunocytochemistry and immunohistochemistry. **Sigma Immunochemicals. Circle 142.**

A mAb to p53 (clone BP 53-12) recognizes an epitope on the primate p53 nuclear protein that is resistant to denaturation. It can

be used for the detection and quantitation of p53 in malignant tissues using immunohistochemistry, immunocytochemistry, enzyme-linked immunosorbent assay, immunoblotting, and immunoprecipitation. **Sigma Immunochemicals. Circle 143.**

A mAb that can distinguish between the bioactive, dimeric human inhibin and the large excess of free alpha subunit forms found in body fluids has applications in infertility research. **Harlan Bio-products for Science. Circle 144.**

## Dry Ice Machine

A new Insta-Ice dry ice machine that produces 3-pound blocks in about a minute and a half offers cost-effectiveness compared with dry ice pellets and smaller blocks. The larger block facilitates longer working periods in the lab. Instant access to the ice eliminates the long waits and costly minimums needed for delivery from commercial vendors. The machine complements a line that includes 1-pound and 2-pound dry ice block makers. **Polyfoam Packers. Circle 145.**

## Gel Visualization and Documentation System

A new electronic instant photography system for visualization and documentation of electrophoresis gels can make traditional cameras obsolete and cut costs dramatically. Any stain type, wet gel, or autoradiogram can be photographed in seconds. The FP 1000 Visualization System incorporates a high resolution charge-coupled device camera with a 600-nm filter, a 256 gray scale thermal printer, a monochrome 9-inch monitor, and a low pro-

file darkroom with a viewing port. Adding the PHD 2000 Documentation System allows digital storage and archiving of the pho-



tographed images on a 3.5-inch floppy disk and provides for serializing and dating of the stored images. The PHD 2000 can also enhance the images with integration to intensify the faint bands and averaging to reduce the background noise. **Ultra-Lum. Circle 146.**

## Literature

*Stratagene Cloning Systems 1994* highlights the additions of more than 50 new products to established lines of molecular and cellular biologicals and equipment. The 327-page publication lists cloning vectors, competent cells and packaging extracts, transfection reagents, nucleic acid purification products, markers and standards, synthetic oligonucleotides, modifying enzymes, restriction enzymes, and more. **Stratagene. Circle 147.**

*Culture with Confidence* describes a line of water-jacketed CO<sub>2</sub> incubators designed to maintain ideal growth conditions for cell and tissue culturing applications. **Precision Scientific. Circle 148.**

*Cytokine Release from Human Leukocytes* is a poster with up-to-date information on cytokines and their cellular sources. **R & D Systems. Circle 149.**

*Multiple-use CCTV/Photo Adapters for Nikon Microscopes* and *Multiple-use CCTV/Photo Adapters for Olympus Microscopes* describes a complete product line. **Optem International. Circle 150.**

Newly offered instrumentation, apparatus, and laboratory materials of interest to researchers in all disciplines in academic, industrial, and government organizations are featured in this space. Emphasis is given to purpose, chief characteristics, and availability of products and materials. Endorsement by *Science* or AAAS is not implied. Additional information may be obtained from the manufacturers or suppliers named by circling the appropriate number on the Readers' Service Card and placing it in a mailbox. Postage is free.

# Science without Borders:

## Career Opportunities in European Pharmaceuticals and Biotechnology

by John Timpane

**"B**roken English

is the language of international science," according to François Kourilsky, director general, Centre National de la Recherche Scientifique. Kourilsky should know. One tenth of the tenured faculty at the CNRS are foreign-born, as are fully a quarter of the new recruits. Like all science in Europe, biotechnology and pharmaceuticals have become world science, "a truly international, global endeavor," says Jean-Bernard Le Pecq, senior vice president of discovery research, Rhône-Poulenc Rorer, Paris, France.

For European research and discovery, these are incomparable years. "I've never known a time in my 24 years in this business when people worked so hard," says Ian Collins, managing director, Executive and Scientific Appointments. "We're seeing both unprecedented pressures and unprecedented productivity." Each new scientific nativity has its European cradle—from peptidomimetics to genomics, from antisense to ag biotech, from three-dimensional computerized drug design to diagnostics. Below we survey the employment picture for scientists in Europe. Despite pressures and

changes both at home and abroad, European science recognizes neither borders nor limits.

### Prospects

Home to approximately 700 biotech companies and over 2,000 pharmaceutical companies (including national operations of multinational companies),

Europe is the world's largest pharmaceutical production center, according to the European Federation of Pharmaceutical Industries' Associations (EFPIA), accounting for a total market value of more than Ecu 78 billion, or 40 percent of the world total. Pharmaceutical companies employ more than 535,000 people, compared with between 60,000 and 80,000 for biotech. European pharmaceuticals is an industry in transition, while biotech is an industry emerging. After averaging eight percent annual growth through the 1980s, the European market slowed with the worldwide recession and is stuck at two percent, according to IMS International. Ernst & Young places the European biotech market at Ecu 5.1 billion today—but it is expected to reach Ecu 83.3 billion by the year 2000.





Europe '94

## EMPLOYMENT IN EUROPEAN BIOPHAR- MACEUTICALS

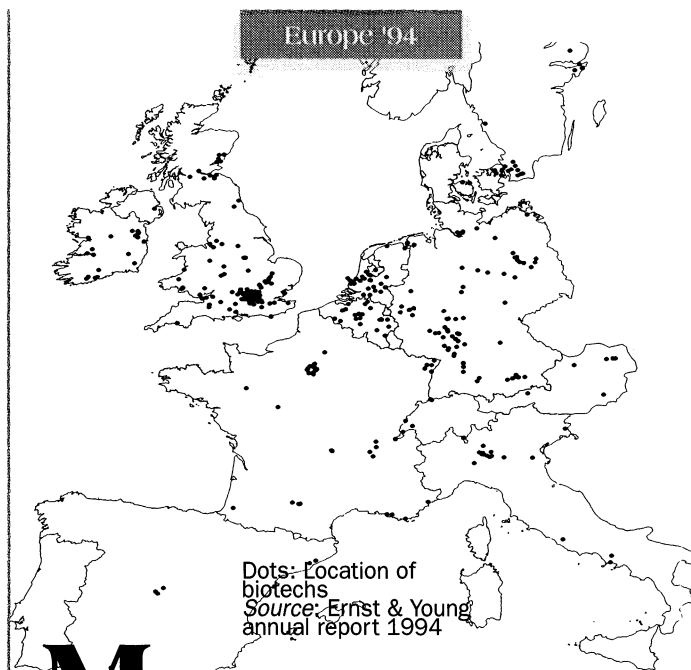
### Molecular Biology

Martin Ferber, director of personnel, Pfizer Central Research, Europe, says, "The European industry sees an increasingly important part to be played by the new biological sciences. The next few years will see a significant contribution from molecular biologists—in fact, we're already seeing breakthroughs that will have a profound impact on therapeutic directions." Collins of Executive and Scientific Appointments calls molecular biology "a continuing area of growing demand," while Larry Botheras, head of pharmaceuticals and health care for the search firm Macmillan Davies, sees "a fairly substantial move in all sectors towards a molecular approach."

### Genomics

"By far the most interesting scientific development of the past five years has been the Human Genome Project," says John Montana, head of medicinal chemistry in the pharmaceutical R&D division at Chiroscience. "Coupled with improvements in molecular biology, genomics is now allowing us to identify the biological systems responsible for diseases such as multiple sclerosis and autoimmune disease."

"Genetics is having a huge impact on everything we do," says Jackie Hunter, director of neurology research, SmithKline Beecham, UK. An excellent example is apoptosis. Programmed cell death promises new therapeutic approaches to certain kinds of cancer and neurodegenerative disease. Montana of Chiroscience says, "Now we've been able to identify genes and systems responsible for certain enzymes involved in apoptosis. Identifying those



**M**ost science employment is need-specific. The eight companies featured below—Bayer AG, SmithKline Beecham, Glaxo, Rhône-Poulenc Rorer, Xenova, Chiroscience, NeuroSearch, and MorphoSys—have needs that reflect both the macroclimate (cost-consciousness versus scientific explosion) and the microclimate (the personality and maturity of the individual company). Still, hiring officers largely agree that their greatest needs lie in five areas.

enzymes allows us to target potential drugs that inhibit these systems. It's a very, very exciting area, and the first of several that will emerge from the Human Genome study."

Genomics has affected more than therapeutics alone. "People are talking about gene therapy a great deal," says David Collingham, managing partner of the executive search firm Ruston Poole International. "But they're also talking about gene probe diagnostics, an area much closer to market entry and much more practical right now. Diagnostics are very exciting in infectious diseases such as hepatitis B and C. That is because for these products there are fewer regulatory hurdles and quicker results."

### Chemistry and Pharmacology

Chemists and pharmacologists are still the mainstays of most pharmaceutical enterprises. If anything, the new fiscal restraint makes these people even more important, since it is they who formulate, test, and evaluate new drug candidates at the early stages of development. Companies wishing to save money will want people who can spot the not-cost-effectives and good-but-not-good-enoughs early. And, as Botheras of Macmillan Davies says, "There's always a need for organic synthetic chemists to make what the modelers design."

Medicinal chemists are another mainstay in the

interdisciplinary effort of drug discovery. "They can interact with scientists in process research and development, with toxicologists, molecular biochemists, and chemical engineers," says Montana of Chiroscience, "to learn how to develop and process large quantities of these agents."

### Pharmaco- economics

Wanted: Experienced scientist, expert in drug design and development, with powerful credentials in market analysis. Object: To focus on each new drug candidate and determine whether its probable profits will justify the costs of development.

In the new atmosphere of cost-awareness, drug companies need such prognosticators. "It's getting harder and harder to justify the traditionally astronomical cost of development," says one director of R&D. "Companies now want to know, and know early, whether it's worth it to pursue a new drug lead. They're hoping to avoid regulatory failures down the line." Countries such as France and Australia already require companies to show that their drugs are not only physiologically effective but also cost-effective. More and more, the pharmacoeconomist is being asked both to predict the future and to help it happen.

### Downstream Science

"The research side of pharma and biotech has always been successful," says Collins of Executive and Scientific Appointments. "Now the downstream side must handle that success." Companies are hiring a growing number of chemists, biophysicists, and chemical engineers in the areas of preclinical and clinical research, process development, and manufacturing, areas that will continue to grow as biotechnology companies bring products to the development stage.

# Science is theatre.

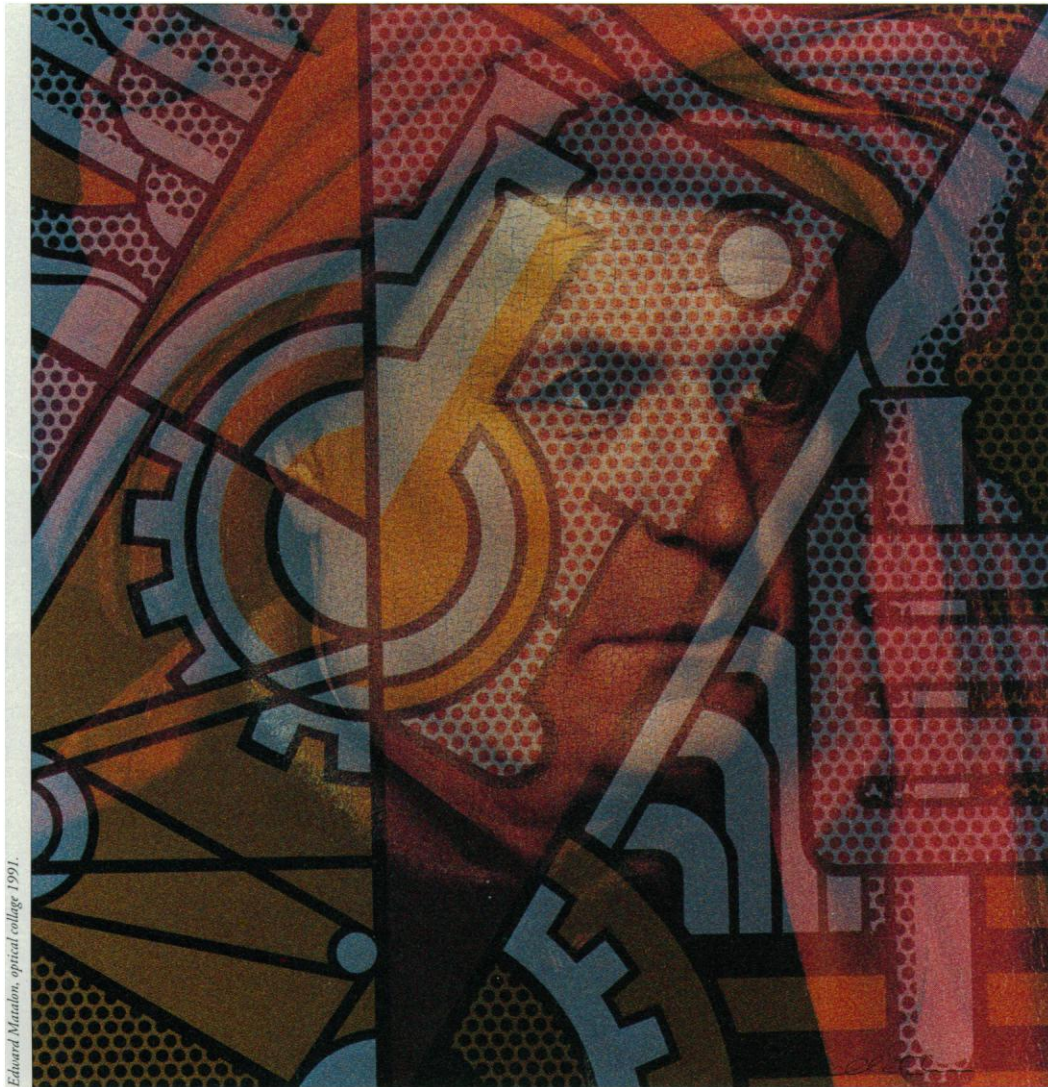
*"Both disciplines are drawn from studied observations and are performed in an atmosphere of high uncertainty, totally dependent on the strength of human imagination." —Dr. Gwyn Morgan, SmithKline Beecham Pharmaceuticals Research and Development*

The creation of great science depends on giving the finest scientific minds an arena in which to dare, explore and express themselves through the stimulation of peer collaboration and the support of a worldwide network of technology and data.

This is the environment of SmithKline Beecham Pharmaceuticals Research and Development. Our history has been marked by pioneer discoveries including the phenothiazine tranquilizers, the H<sub>2</sub>-receptor antagonists for gastrointestinal diseases, the identification of the 6-APA nucleus for beta-lactam antibiotics, the creation of the semi-synthetic penicillins, the first successful development of the  $\beta$ -lactamase inhibitors to circumvent bacterial resistance and the development of the world's first commercially available, genetically engineered human vaccine against hepatitis B. These accomplishments have been recognized by the award of a Nobel Prize and fourteen Queen's Awards in the U.K. since 1966.

We look to the future with great optimism and the opportunity to explore the yet unrevealed panorama of challenges in our quest for superior therapeutics. If you feel strongly about

pursuing your career in a progressive environment, please send your resume to: SmithKline Beecham Pharmaceuticals, Research & Development, Dept. S11/25/94, P.O. Box 401, Conshohocken, PA 19428. An Equal Opportunity Employer, M/F/D/V.



Edward Matalon, optical collage 1991.

**SB**  
**SmithKline Beecham**  
Pharmaceuticals  
Challenging the natural limits.



## ADVERTISING SUPPLEMENT

Europe '94

Worldwide, chemistry and pharmacology are

probably our most looked-for disciplines. We'll always need such people.

The future will see an evolution for many of the larger pharmaceutical companies. As with the Merck purchase of Medco, no one can afford to ignore the generic market any longer. While some companies will attempt a niche strategy, others will try to stay with their proven strengths. We'll still have companies totally committed to innovation. But I'm not sure every company can sustain such a commitment. The financial demands on R&D are growing at a frightening pace.

On the whole, I don't think that the situation in Europe is very much different from that in the United States. In the present climate, the pharmaceutical industry will continue to be under pressure, and the best way to react is to become better.



### Frank Morich Head of Worldwide R&D Bayer AG, Leverkusen, Germany

At Bayer, we view ourselves as increasingly international. Our traditional strengths have included cardiovascular drugs—nifedipine, for example—and anti-infectives, such as the fluoroquinolone antibiotic ciprofloxacin. We'll continue to work in these areas. But in one way or the other, biotechnology is the direction the industry is taking. Recently, Kogenate®, a recombinant factor VIII, was approved in Europe, Japan, and the states. In light of the strong interest in signal transduction and disturbed signal transduction in cancer, we have concluded a five-year agreement with Onyx Pharmaceuticals to study the *ras* pathway and identify therapeutically significant targets. Within Bayer, we have built a unit specifically for recombinant protein research; as a separate company, it would rank with the largest biotechs in the world.

Over the last five years, we have had a wave of hirings in molecular biology. In our research center in West Haven, Connecticut, the last building finished happens to be a chemistry institute, so we're hiring many organic chemists there now. In Japan, we're looking for pharmacologists.

### Outlooks and Insights at NeuroSearch

#### GLOSTROP, DENMARK—

Jørgen Buus Lassen, president and CEO of NeuroSearch A/S, says, "I have been in this business for 25 years, and I know that you need to have a very experienced staff ready to make a new drug. Many new companies don't have that." NeuroSearch, founded in 1989, has put together expertise in CNS research and biopharmaceutical management, with results that belie its five years of age.

"We have established a number of programs on the cellular mechanism involved in CNS dysfunctions," says Buus Lassen. "We have synthesized between 2,000 and 3,000 novel compounds that may correct such dysfunctions. We are now starting our first development programs. As soon as we have a marketable compound, we plan to collaborate with established companies for production and marketing." Programs include glutamate (AMPA) antagonists (for treatment of acute and chronic neurodegenerative diseases), dopamine uptake inhibitors

(for parkinsonism, depression, and cocaine addiction), calcium channel blockers (for neurodegenerative diseases), potassium channel blockers (for stroke and smooth muscle spasms), NO-modulators (for Alzheimer's disease and smooth muscle spasms), and GABA<sub>A</sub> modulators (for anxiety and epilepsy).

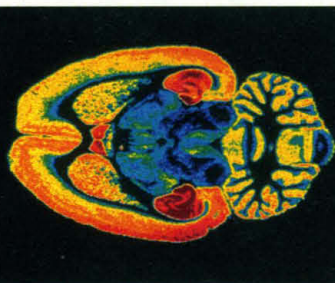
NeuroSearch has benefited from the strong neuroscience tradition in and around Copenhagen. "Much of the pioneering work has been done here," says Buus Lassen. At Nils Diemer's laboratory at the University of Copenhagen, Jørgen Drejer demonstrated increased glutamate release after artificially induced brain ischemia in rats. Drejer is now director of the NeuroSearch cell biology laboratories.

NeuroSearch is looking for the best cellular biologists, pharmacologists, and synthetic chemists. The NeuroSearch philosophy is to

bring medicinal chemistry into each major program. "That's why we have been successful in obtaining results with fewer toxic effects," Buus Lassen says. "We are also looking to supplement our preclinical staff with a clinical research director."

A bright outlook, one like Jørgen Buus Lassen's, is also an asset. "The treatment of CNS dysfunction has been a very complex, difficult area," he says. "It has been especially complicated to get rid of all the side effects, even in very successful drugs, and several companies have given up their CNS projects. But we and other companies have very promising molecules. We now have good insights into the central dysfunctions leading to nerve cell death, and we have a number of programs, including drugs in advanced preclinical studies. I'm very optimistic."

From left to right: Jørgen Buus Lassen of NeuroSearch; Autoradiographic image of 3H AMPA binding in the rat brain; The Chiroscience board of management



### Science with a Switch: Chiroscience

#### CAMBRIDGE, ENGLAND—

Chiroscience Limited is the world's leading chiral technology company, focusing exclusively on single isomer compounds for the pharmaceutical industry. Not only is Chiroscience a chemical supplier, a problem-solver, and a leading research company—but also it supplies partners with the chiral building blocks with which to create future drugs.

John Padfield, CEO, says, "We've had a chance to learn from the U.S. experience. One major lesson is that no one company can do everything. That's why we can say to our pharmaceutical partners, 'Why do it yourself? Why not come to us?'"

A good example is the partnership between Chiroscience and Menarini, one of Italy's largest pharmaceutical companies. Following evidence that a single isomer version might have medical benefits, the two companies joined forces to produce a chiral variation on the NSAID ketoprofen. The result was dexketoprofen, now close to market in Europe. Other allies include Abbott, Wellcome, and Glaxo.

When asked about future employment opportunities, John Montana, head of the medicinal chemistry division of pharmaceutical R&D, points to the growing importance of molecular biology and genetics, as well as the combination of these fields with computer science. "We're looking for medicinal chemists, organic synthetic chemists, biologists, molecular biologists, and experts in analytical science." Those with specialties in chiral



Photograph of molecular model courtesy of Chiroscience Limited; Photographs of Buus Lassen and autoradiograph courtesy of NeuroSearch A/S; Photograph of board members courtesy of Chiroscience Limited



## ADVERTISING SUPPLEMENT

Europe '94

chemistry, including chiral pool, resolution, and asymmetric methods, are of interest. Experience in polarimetry, gas and liquid chromatography, and x-ray crystallography is much valued.

"Portability is now a given in international science," says Padfield. "As UK and European scientists, we're very much used to working across borders of every sort." Montana adds, "We have exceptionally good relations with academic science. The academy is looking more now to industry for funding, and their research thus becomes

much more focused in industrial terms."

Chiroscience has created more than 25 collaborations with both European and United Kingdom universities in projects involving synthetic organic chemistry, analytical sciences, biology, and drug design. "The future for this industry looks very good indeed," says Padfield. "Closer collaboration between government, industry, and the academy, especially in the UK, is helping that future along. There is a tremendous depth of science in Europe."

### Genetics, Biotech, and International Research at SmithKline Beecham

**HARLOW, ENGLAND—**

Jackie Hunter is the director of neurology research at SmithKline Beecham, UK. Her department focuses on migraine, stroke, pain, and cognitive disorders. SmithKline Beecham has important programs studying schizophrenia, depression, anxiety, and Alzheimer's disease.

"Genetics and biotechnology are definitely the major areas of interest today," Hunter says. SmithKline Beecham recently joined forces with Human Genome Sciences to sequence as many portions of the human genome as possible in the next four years to identify sequences of relevance for designing novel therapies. "This approach has already been extremely productive with Alzheimer's," she says. "We now know that if you have the apoE4 isoform of the apoE gene, you are at a greater risk of developing Alzheimer's than people with the apoE2 isoform. This leads us to a way of screening Alzheimer's patients and targeting drug trials much more effectively."

Hunter would like to see genetic breakthroughs with Alzheimer's equaling those in cystic fibrosis and hypertension: "If we could fully understand the genetic control of proteases involved in processing the beta-aminoid

peptide involved in Alzheimer's, we could possibly design a way to correct that process genetically." The growing emphasis on human specific receptors will also accelerate the development of techniques such as antisense and increase the need for functional studies of human tissue.

Hunter says that pharmacology, biochemistry, and behavioral pharmacology are areas of particular need. "And molecular biology has become a core science." Hunter's advice: "Have some molecular biology in your background, as well as computer and information skills. The main thing is to be able to process large quantities of information—and always to expect change. That's the name of the game here."

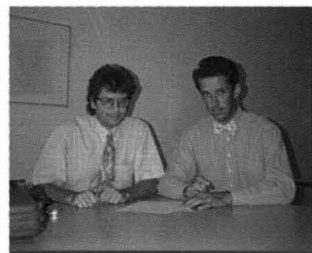
So is international science. Melanie Graper, human resources director for discovery, describes SmithKline Beecham's European University Links Program, which offers three-month and six- to 12-month work placements to outstanding science students at European universities. "We have a committee of scientists who select and act as liaisons for these universities," Graper says. Target fields include chemistry, biochemistry, biology, microbiology, pharmacology, safety assessment, and pharmaceutical research and development. Participating universities this year were Louvain-La Neuve in Belgium, Tübingen in Germany, Leiden in the Netherlands, Milan in Italy, and Zurich in Switzerland. "In the longer term, we'll be extending our graduate recruitment activities throughout Europe," Graper says. "This fits into our culture of going global. You can't really do research in a vacuum."

### The Evolution of MorphoSys

**MUNICH, GERMANY—**

MorphoSys is a European company that started in an American fashion—as a good idea arising in an academic setting. The field is protein engineering, where many companies are looking for the best ways to recycle promising proteins through continuous structural "mutations" until those proteins reach their most effective form. MorphoSys offers new ways of creating and searching protein collections. Simon Moroney, a New Zealander and CEO of MorphoSys, says, "We use our proprietary technology to make a large collection of versions of a particular protein, search for improved versions, and recycle this program again and again." The dividends: Accelerated discovery and production of therapeutically important compounds.

Andreas Plückthun, professor of biochemistry at the University of Zurich and founder and scientific advisor at MorphoSys, says, "The real incentive for starting the company was seeing other people do it, especially in the states and in England, and the question arose: Why not I? It's still extremely



Above: Plückthun (left) and Moroney (right) of MorphoSys; left: Frances Fox (left) and Martyn Ainsworth of Xenova evaluate fungal isolates

uncommon in Germany and Switzerland, whereas in the states it's quite common and becoming more so in England. It's a question of attitude, culture, risk-taking, and the financial market."

"The revolution in antibody engineering—and protein engineering in general—has been very exciting," says Moroney. "Things are moving rapidly: You have phage display, mutagenesis, optimization in peptides and other proteins." That means that MorphoSys has very specific requirements for the ideal employee. "What is most important," says Plückthun, "are scientists highly competent in molecular biology, but who also have an appreciation of structure. They have to understand the protein they're going to produce, while thinking about engineering that protein."

With a core group of 16 scientists, 10 of them PhDs, MorphoSys is now assembling an international constellation of clients, collaborators, and investors. Munich is located in a *Land*—Bavaria—whose rules and regulations are especially sympathetic to entrepreneurial science. In such a promising setting, Moroney is acutely aware of using science to improve on nature. "In nature, proteins are only as good as they have to be. We're not constrained in that regard. Here, we're trying to make them as good as they can be."

exploring promising leads in areas such as cancer, CNS, cardiovascular disease, and immune-inflammatory disease. The following is a dialogue between Alan Garmonsway, head of human resources, and Trevor M. Twose, director of corporate planning and development.

**TT:** The buzzwords here and throughout the industry include genomics, molecular medicine, DNA-based diagnostics, high-throughput screening, and, in general, new approaches to drug discovery through new molecular targets.

**AG:** Our main hiring interests were, from the beginning, in microbiology, biochemistry, and analytical chemistry, followed later by molecular biology,

### New Targets at Xenova

**SLOUGH, ENGLAND—**

Xenova Group plc is a biopharmaceutical company specializing in new small molecule drugs derived from natural resources such as microorganisms and plants. With one of the world's largest collections of microorganisms for drug discovery, Xenova is



medicinal chemistry, and pharmacology. As we find successful compounds, however, we are developing our preclinical elements. That means we're also looking for the excellent scientist who can also handle resources and partnerships.

**TT:** Europe is a long way from being a federal state. But we see few barriers to developing the kind of partnerships we need to grow. We already are working with Genentech, Genzyme, Warner-Lambert, Suntory, and others on important projects.

**AG:** Larger pharma are beginning to realize the excellent synergistic opportunities with biotech. Lately, a number of CEO's have been saying quite publicly that they want to start outsourcing their research. That's great for biotech companies. On the other hand, most companies in the biotechnology industry lack many of the downstream elements,

production especially. We've adopted the virtual organization model, using contract research organizations and hired consultants. That affects our employment outlook. We want people for whom specialist science is a true calling. Have they done independent research and done it well? Then further, Can they integrate that science into a multidisciplinary company, and with other companies as well?

**TT:** Then we look for ability to lead and manage partnerships and collaborations. If there's a skills shortage, it's in the experienced specialized scientist with established skills in the industry. Part of the problem, once you've found them, is prizing them out of the larger companies and getting a cultural fit in a smaller company.

I doubt we've ever seen such a promising time for discovering new drugs and new technologies. You're seeing the growth of combinatorial resource companies, peptide library companies—it's an exciting time.

## "Find the New Ways": the Progress of Rhône-Poulenc Rorer

### PARIS, FRANCE—

It has become a familiar story over the last five years. Two pharmaceutical giants merge, weather the recession, and set out for the promised land of gene and cell therapy.

In 1990, Rhône-Poulenc merged with Rorer Group Inc. to create Rhône-Poulenc Rorer Inc. (RPR). "We reorganized our research, concentrated into fewer fields to be competitive, and decided that as quickly as possible, we should create a division dealing solely with gene therapy," says Jean Bernard Le Pecq, senior vice president of discovery research. "Before, the industry was driven by chemistry, and that will continue. But now, you will need a very strong interaction between chemistry and biology. And the scientists we are looking for will

also need a strong interaction between these two fields."

Sylvain Visconti, senior vice president of European strategy and development, says the decision is nothing less than "to be among the world pioneers, to invest in new technologies and reorganize our R&D efforts towards them as well as our traditional strengths."

Those strengths have been in oncology and antibiotics. Granocyte®, a recombinant granulocyte colony stimulating factor for the treatment of chemotherapy-induced neutropenia, is currently being launched in Europe. Further, Taxotere®, an anticancer agent derived from the needles of the European yew tree, is showing promise in clinical trials. "Oncology is a very slow-moving field, with only one really interesting drug every 10 years," says Le Pecq. "Taxotere® is truly a step forward that may put us at the forefront of world oncology research." RPR also has products in development for AIDS, cardiovascular disease, asthma, and inflammation.

"We're hiring an increasing number of people in R&D," says Visconti. "We need both people highly specialized in the new technologies, and people who understand the interface of science and business." Chemists are needed not only for classical drug design but also for the new approaches—peptidomimetic drug design and the creation of molecule libraries. "Our biologists will define physiologic targets and their relevance to pathology," says Le Pecq. "Both chemists and biologists will help find ways to increase efficiency. Chemists and biologists everywhere should be thinking in these directions. Find the new ways."



Left to right: Exterior of Rhône-Poulenc Rorer research facility; Scientists and technology at work at Rhône-Poulenc Rorer

## Riding the Information Wave at Glaxo

Colin Dykes, section head of molecular genetics for Glaxo Research and Development, UK, puts it simply: "Glaxo's role is to discover novel medicines for common diseases. My part is to make sure we utilize the flood of information and new technology from genomic research to move us towards that goal."

Melanie Lee, research associate and leader of the receptor biology thematic research group, concurs: "We're responding to this tremendous technological

advance to bring drug development into a new era. That demands united multidisciplinary teams. Working together, molecular biologists, pharmacologists, chemists, protein biochemists and more must combine their repertoire of skills to make powerful and effective drug discovery teams."

Glaxo's human genetics program is studying disease pedigrees, in search of the mutations responsible for different categories of disease. "I talk to my equivalents at other companies, as well as to academic scientists, trying to establish common ground," Dykes says. "With the current information overload, the best way to make progress in these areas—for example, a project to map cDNA's and match them to chromosomal

loci—is collaboration among industry, government, and the academy."

When speaking of exciting recent developments, Dykes and Lee list high-throughput DNA sequencing; gene therapy; generation of single-chain antibodies from recombinant libraries; targeting DNA molecules to particular cell types using viral vectors; receptor-mediated targeting; long-range PCR; fluorescent ligand development; efficient and versatile expression systems. Molecular biology is growing fast at Glaxo, but, as Lee says, "It's not so much superseding as blending with the other sciences, creating a culture in which we can discover new targets for our drugs."

Both agree that the present-and-

future scientist must be both brain and ballerina. "We value the multidisciplinary, innovative scientist with good interpersonal skills and the ability to work in a high-pressure environment," Lee says. "You need the ability to switch between wide-ranging, innovative thought and tightly focused work," says Dykes, "prosecuting it mercilessly to its conclusion." Lee's enthusiasm speaks for them both: "I just love working here because the emerging science is so exciting."

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

# SCIENCE

## PERSONNEL PLACEMENT

### LINE CLASSIFIED ADVERTISEMENTS

**Deadlines:** Ads are due by Thursday, 10 a.m., 2 weeks prior to the issue date. *Science* is published each Friday, except the last Friday of the year. Call for holiday deadlines. Ads must be submitted in writing.

**How to Submit a Classified Ad:** Prepare double-spaced typewritten copy. Do not include any abbreviations. *Science* will edit and typeset ads according to *Science* guidelines. Include billing information, and desired publication date. Available categories: Positions Open, Meetings, Announcements, Courses and Training, Search Firms. *Science* cannot provide proofs of typeset line ads.

#### Mail, FAX or Email materials to:

Science Classified Advertising  
1333 H Street, N.W., Room 814  
Washington, DC 20005  
Telephone: 202-326-6555  
FAX: 202-682-0816

Internet Email: science\_classifieds@aaas.org

**Rates:** Ads are \$43 per line; \$430 minimum. One line equals 52 characters and spaces; centered headings equal 32 characters and spaces. A 3% cash discount is granted to all prepaid ads.

**Estimates:** *Science* will provide a cost estimate for line ads. This is an approximate cost only. Allow for variation between estimated lines and actual typeset lines and resulting final cost. Purchase orders must allow for some degree of flexibility and/or adjustment.

**Ads from Outside the U.S.:** A discount of \$30 will be offered to advertisers making payment in U.S. dollars by checks drawn on U.S. banks. Contact Gordon Clark at +44 223 302 067 (telephone) or +44 223 302 068 (FAX).

**Credit Cards:** *Science* accepts American Express, MasterCard and VISA. Discount does not apply to credit cards.

**Cancellations:** Deadline for cancellation is 10 a.m., Tuesday, 10 days prior to issue date.

### DISPLAY PERSONNEL ADVERTISEMENTS

For rates and info. for fractional display ads call:

Deborah Cummings  
Recruitment Advertising  
Telephone: 202-326-6541  
FAX: 202-682-0816

Janis Crowley  
Recruitment Advertising Manager  
Telephone: 212-496-7704  
FAX: 202-682-0816

Gordon Clark  
European Recruitment Advertising  
Telephone: +44 223 302 067  
FAX: +44 223 302 068

**CONDITIONS:** The AAAS encourages employers to actively recruit and employ underrepresented minority groups. *Science* reserves the right, at its discretion, to edit or decline to publish advertisements submitted to it.

## POSITIONS OPEN

### BEHAVIORAL AND SYSTEMS NEUROSCIENCE RENEWED FACULTY RECRUITMENT Center for Behavioral Neuroscience SUNY at Stony Brook

The Center for Behavioral Neuroscience (CBN) is a newly established facility dedicated to collaborative, multidisciplinary research on the functional organization of the nervous system. CBN invites applications for a tenure-track position at the **ASSISTANT PROFESSOR** level. Existing CBN faculty have strong interests in learning, memory and aging and new faculty will be selected to complement strengths in the Center.

Applicants should have the Ph.D. and/or M.D. degree, substantial postdoctoral training, and a proven record of research accomplishment. The successful applicant will establish an independent, funded research program and will participate in the teaching mission of the Center. Researchers with interest in the functional organization of systems involved in vision, memory and emotion, or in human neuroscience, including functional imaging, are particularly encouraged to apply.

Closing date for applications is January 5, 1995. The appointment is expected to begin in September 1995.

For consideration, applicants should submit a current curriculum vitae, description of research directions and name, address and telephone numbers of three references to: **Search Committee, Center for Behavioral Neuroscience, SUNY at Stony Brook, Stony Brook, New York 11794-2575.**

*State University at Stony Brook is an Equal Opportunity/Affirmative Action Employer.*

### ASSISTANT PROFESSOR BEHAVIORAL NEUROSCIENCE

The Department of Psychology of the University of Toronto invites applications for a tenure-stream faculty appointment at the rank of **ASSISTANT PROFESSOR** in behavioral neuroscience beginning July 1995. The candidate should have a Ph.D. in the relevant area and broad training in neurosciences with a research program that focuses on understanding behavioral processes. Successful applicants are expected to conduct independent research and teach at the undergraduate and graduate levels. Salary will be commensurate with qualifications and experience. Applications, including a curriculum vitae, statement of research and teaching interests, and three letters of recommendation should be sent to: **John Yeomans, Department of Psychology, University of Toronto, Toronto, Ontario M5S 1A1 Canada.** Application deadline is February 1, 1995.

*In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents of Canada. In accordance with its Employment Equity Policy, the University of Toronto encourages applications from qualified women and men, members of visible minorities, aboriginal peoples, and persons with disabilities.*

**ECOLOGIST.** Clark University seeks an **ASSISTANT** or **ASSOCIATE PROFESSOR** with broad interests in conservation biology and behavioral ecology. Responsibilities include an entry-level, interdisciplinary course on ecological systems, and courses in behavioral ecology and conservation biology within the Department of Biology and in the Environment, Technology and Society Program. The position requires the development of an active research program that involves students at the undergraduate and graduate levels. Postdoctoral research and significant teaching experience are required, and the successful candidate must demonstrate excellence in teaching. Individuals interested in the development of management policies for natural populations are welcome. Send curriculum vitae, a brief description of teaching and research interests, and the addresses and telephone numbers of three references to: **Chair, Ecology Search Committee, Department of Biology, Clark University, Worcester, MA 01610.** Review of applications will begin December 15, 1994. *Minorities and women are encouraged to apply. Clark University is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### MYCOLOGIST/PLANT PATHOLOGIST

The Department of Plant Pathology, University of California, Riverside, invites applications for an 11-month tenure-track position at the **ASSISTANT PROFESSOR** level. The position will be available starting July 1, 1995. The successful applicant will be expected to develop a problem-solving research program with fungi and fungal plant diseases. Areas of research may include, but are not limited to, organismal biology, genetics, epidemiology, population genetics, physiology, and ecology, depending on the appointee's interests and expertise. Opportunities exist to work with a variety of crops including citrus, avocados, grapes, vegetables, ornamentals and turf and to develop innovative disease management procedures. Teaching undergraduate and graduate level courses in mycology, plant pathology or epidemiology will be required and the appointee will be expected to mentor graduate students. Applicants must have a Ph.D. degree in plant pathology and must possess a strong commitment to teaching excellence and a strong background or experience in mycology and/or fungal diseases of plants, and have demonstrated an ability to conduct productive and creative research in the areas of mycology and plant pathology. Applicants should submit: (1) Curriculum vitae, teaching and research experience; (2) Undergraduate and graduate transcripts; (3) Complete lists and selected reprints of published works and submitted manuscripts; (4) Statement of teaching and research interests; and (5) Three letters of reference to:

**Dr. John A. Menge, Chair  
Mycologist Search Committee  
Department of Plant Pathology  
University of California  
Riverside, CA 92521  
Telephone: 909-787-4116  
FAX: 909-787-4294**

**Application Deadline:** March 1, 1995.

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

### FACULTY POSITION DEPARTMENT OF MOLECULAR AND CELLULAR BIOLOGY UNIVERSITY OF ARIZONA

As part of a continuing expansion, the Department of Molecular and Cellular Biology is seeking a new tenure-track faculty member at the **ASSISTANT PROFESSOR** level for appointment in 1995. Applicants with research interests in the molecular, cellular, or developmental biology of any organism including plants, animals, fungi, or bacteria will be considered. Successful candidates will be expected to establish a competitive research program and to teach at both the undergraduate and graduate levels. Send curriculum vitae, a one-to-two page statement of research interests, and have at least three supporting letters sent to: **Professor Samuel Ward, Head, Department of Molecular and Cellular Biology, Life Sciences South Building, Room 444, University of Arizona, Tucson, AZ 85721 USA.** To ensure consideration, applications should be received by December 16, 1994, although applications will be accepted until the position is filled. *The University of Arizona is an Equal Employment Opportunity/Affirmative Action/ADA Compliance Employer. Women and minorities are encouraged to apply.*

**CONSERVATION BIOLOGY Faculty Position.** The Department of Biological Sciences invites applications for a tenure-track **ASSISTANT PROFESSOR** position, pending budget approval. A Ph.D. is required, postdoctoral experience is preferred, and the area of research specialization is open. Individuals with interests in biodiversity, population or community ecology, or ecosystem study are especially encouraged to apply. Teaching responsibilities will include conservation biology and course development in their area of specialization. The individual will also be expected to interact extensively with the university's interdisciplinary graduate program in environmental studies. Salary is \$34,000 for the academic year. The Department of Biological Sciences offers M.S. and Ph.D. degrees. Applicants should send curriculum vitae, statement of research interests and teaching experience, and the names, addresses and FAX numbers of three potential references by 1 January 1995 to: **Jean Witkowski, Department of Biological Sciences, Ohio University, Athens, OH 45701.** *Ohio University is an Equal Opportunity/Affirmative Action Employer. Women and minority candidates are especially encouraged to apply.*



## POSITIONS OPEN

### ASSISTANT, ASSOCIATE OR FULL PROFESSOR Control of Gene Expression in Eukaryotes

The Departments of Genetics and Cell Biology and Biochemistry and Biophysics invite applications for a tenure-track position to be filled at the **ASSISTANT, ASSOCIATE, or FULL PROFESSOR** level to begin August 1995 or later. Senior-level applicants are expected to have, while junior-level applicants are expected to establish, a strong, independent research program in the area of regulation of eukaryotic gene expression. Successful applicants are expected to have, or obtain, extramural research funding. Postdoctoral experience is required. Instructional responsibilities include participation in both graduate- and undergraduate-level courses in molecular genetics and biochemistry in a College that values quality teaching. The appointment will be at least half-time in the Department of Genetics and Cell Biology with the balance in the Department of Biochemistry and Biophysics. Both departments have strong programs in the area of gene expression in prokaryotes and eukaryotes, and the appointee's research is expected to complement one or several of these programs. Screening of applications will begin January 20, 1995, and continue until the position is filled. Applicants should indicate a preference for consideration at the Assistant, Associate or Full Professor level. Applicants should send a letter of application, a curriculum vitae, a statement of current research and long-term research interests, as well as three letters of recommendation to: **Dr. Raymond Reeves, Chair of the Search Committee, Department of Genetics and Cell Biology, Washington State University, Pullman, WA 99164-4234.** *Washington State University is an Equal Opportunity/Affirmative Action Educator and Employer. Members of ethnic minorities, women, Vietnam-era or disabled veterans, persons of disability, and/or persons age 40 and over are encouraged to apply.*

### ASSISTANT PROFESSOR OF BIOLOGY

The Department of Biological Sciences of the University of South Alabama (USA) invites applications for a tenure-track position at the **ASSISTANT PROFESSOR** level to begin September 1995. We are seeking a colleague who is enthusiastic about teaching human anatomy and physiology to non-major undergraduates. The specific area of research specialization is open. The successful candidate must hold a Ph.D. in a biological science and have demonstrated excellence in teaching anatomy and physiology. Salary is competitive. Graduate programs include the M.S. in Biology and Ph.D. in Marine Sciences. The Department of Biological Sciences has 15 full-time faculty and modern research facilities. USA has 12,000 students, eight colleges, many M.S. programs, four Ph.D. programs, and includes a comprehensive medical center. The location is a wooded campus in a mild, Gulf coast environment. Send a letter of application, statement of teaching philosophy, description of research interests, curriculum vitae, names, addresses, and telephone numbers of at least three references to: **Search Committee, Dr. David H. Nelson, Department of Biological Sciences, University of South Alabama, Mobile, AL 36688. Telephone: 205-460-6331.** Deadline for receipt of applications is 2 January 1995. *An Equal Opportunity/Affirmative Action Employer/Minorities/Female/Disabled.*

### ASSISTANT OR ASSOCIATE PROFESSOR OF MEDICINE (ONCOLOGY) STANFORD UNIVERSITY SCHOOL OF MEDICINE

One full-time position at Stanford University Medical Center. Candidates should be fully trained in medicine and the subspecialty of oncology. They should be prepared to establish an independent laboratory program in some area of cancer research. Applicants with interest in cell biology, molecular biology, immunology, or genetics and in the translation of scientific methods and discoveries to problems in clinical oncology are especially encouraged. Salary support, laboratory space and start-up funds are available for this position, but there should be evidence of ability of the candidate eventually to obtain peer-reviewed research funding. Stanford University is committed to increasing representation of women and members of minority groups on its faculty and particularly encourages applications from such candidates. Please send curriculum vitae, a statement of career plans, and three names of references to: **Ronald Levy, M.D., Chief, Division of Oncology, Stanford University School of Medicine, SUMC M211, Stanford, CA 94305-5306.**

## POSITIONS OPEN

### AQUATIC ECOLOGIST ILLINOIS NATURAL HISTORY SURVEY

The Center for Aquatic Ecology (CAE) invites applications for a career-track position as an **ASSISTANT PROFESSIONAL SCIENTIST**. We seek exceptional candidates studying ecological processes at the population, community, or ecosystem/landscape level. Preference will be given to individuals with strong quantitative skills who utilize empirical and theoretical approaches to address basic/applied questions of broad significance to aquatic ecosystems. Candidates must hold a Ph.D. in an appropriate discipline, have an outstanding record of independent research, and will be expected to develop a strong, externally funded research program relating to ecology/evolution/conservation in freshwater systems. The Illinois Natural History Survey (INHS) is an Affiliated Agency of the University of Illinois and is located on the Urbana-Champaign campus. The ten CAE scientists conduct self-directed research on a broad range of questions and study a wide array of taxa in systems ranging from large rivers and the Great Lakes, to boreal streams and temporary ponds. CAE scientists have full access to campus facilities and resources, and may hold affiliate appointments in university departments, teach, and supervise graduate students. Technical questions regarding this position should be directed to the search chair: **Dr. William Resetarits, INHS-CAE, telephone: 217-244-4597; Email: resetar@denr1.igis.uiuc.edu.** To apply: Please send a letter of application, curriculum vitae, a statement of research interests, reprints of no more than three representative publications, and the names, addresses, and telephone numbers of four references to: **Jacqueline Sanders, CAE Search, Illinois Natural History Survey, 607 East Peabody, Champaign, IL 61820. Telephone: 217-244-7790; FAX: 217-333-4949.** Applications should be received by 6 January 1995 to ensure full consideration. *The Illinois Natural History Survey is an Equal Employment Opportunity/ADA Employer.*

### EVOLUTIONARY BIOLOGY DEPARTMENT OF PLANT BIOLOGY THE OHIO STATE UNIVERSITY

We seek a Ph.D. evolutionary biologist or systematist for a nine-month, tenure-track position at the **ASSISTANT PROFESSOR** level. The successful applicant shall develop an externally funded research program which employs modern techniques and emerging technologies to study the evolution and/or systematics of plants. Postdoctoral experience is preferred. This position also requires the direction of graduate students, the teaching of an advanced course in the person's specialty, and contributions to the department's introductory courses in organismal biology. Submit curriculum vitae, reprints, statements of research interests and teaching philosophy, and three letters of reference to: **Search Committee, Department of Plant Biology, The Ohio State University, 1735 Neil Avenue, Columbus, OH 43210 USA.** Review of applications will begin on January 5, 1995, and will continue until a suitable candidate is identified. *The Ohio State University is an Equal Opportunity/Affirmative Action Employer. Qualified women, minorities, Vietnam-era veterans, and persons with disabilities are encouraged to apply.*

### ASSISTANT PROFESSOR ENVIRONMENTAL SCIENTIST

Illinois Benedictine College is looking for a tenure-track **ASSISTANT PROFESSOR** Environmental Scientist planned to begin August 1995. Ph.D. required. Especially interested in candidates with Freshwater Biology experience. Responsibilities are teach introductory Environmental Science courses, upper-level course in specialty and Introductory Microbiology; participate in Introductory sequence; develop research program involving undergraduates. Research funding possible. Cover letter should address your interest in undergraduate teaching in a liberal arts environment. Send curriculum vitae, statement of teaching philosophy and research experience, transcripts, and three letters of recommendation to: **Dr. Alfred Martin, Search Committee, Department of Biology, Illinois Benedictine College, 5700 College Road, Lisle, IL 60532.** Application deadline is January 6, 1995. *Illinois Benedictine College is an Affirmative Action/Equal Opportunity Employer; women and minority candidates are especially encouraged to apply.*

## POSITIONS OPEN

The Department of Biology, Villanova University invites applications for two tenure-track positions at the rank of **ASSISTANT PROFESSOR**. 1) A **CELLULAR/MOLECULAR IMMUNOLOGIST** is sought to develop a graduate course in immunology and to share responsibility for a human anatomy and physiology course for nursing students. 2) A **MOLECULAR BIOLOGIST** is sought to develop a graduate course in recombinant gene technology and to participate in existing offerings in genetics and cell biology. The successful candidates must have postdoctoral experience. Both appointments will commence with the fall semester 1995.

We are seeking individuals who are committed to full participation in a dynamic department that offers B.S., M.S. and M.A. degrees in biology. The successful candidates will share in the collegiate responsibilities of the faculty. Villanova University is committed to excellence in teaching and research. Appointees will be expected to develop active research programs and to direct undergraduate and graduate student research.

Applicants should send a curriculum vitae including a list of publications, transcripts of all undergraduate and graduate work, a statement describing teaching interests and experience, and a statement describing future plans for research. In addition, applicants should arrange to have three letters of recommendation sent. All materials should be addressed to:

**Immunology Search Committee  
or  
Molecular Biology Search Committee  
Villanova University  
Villanova, PA 19085**

In order to ensure consideration, application materials must be received by January 16, 1995. *Villanova University is an Augustinian-related Roman Catholic institution and is an Affirmative Action/Equal Opportunity Employer.*

### UNIVERSITY OF MICHIGAN INVERTEBRATE PALEONTOLOGY/ GLOBAL CHANGE

The Museum of Paleontology and Department of Geological Sciences invite applications for a joint tenure-track position in invertebrate paleontology. We anticipate the appointment will be made in 1995 at the **ASSISTANT PROFESSOR** level, but more senior candidates are encouraged to apply. Ph.D. is required. We seek applicants with broad research and teaching interests in earth history, paleobiology, and global change, with expertise in fossil invertebrates (metazoan and/or protistan). Current faculty in paleontology are **R.J. Burnham, D.C. Fisher, P.D. Gingerich** and **G.R. Smith**. Resources include strong programs in paleoceanography, sedimentary geology, and geochemistry in the Department, and organismal and evolutionary biology within the University. Museum appointment involves shared curatorial responsibility for a major invertebrate research collection. Interested candidates should submit a curriculum vitae, statement of research and teaching interests, and names of five persons from whom we may request letters of recommendation, to: **Prof. Daniel C. Fisher, Search Committee Chair, Museum of Paleontology, Ann Arbor, MI 48109-1079. FAX: 313-936-1380; Email: dcfisher@umich.edu.** Closing date for applications is January 31, 1995. *The University of Michigan is a nondiscriminatory, Affirmative Action Employer.*

### ASSISTANT PROFESSOR—BIOPHYSICS (Deadline Extended)

The Department of Physics, Illinois Benedictine College, is planning to hire a tenure-track position **ASSISTANT PROFESSOR** for fall 1995. Ph.D. required with a research interest in molecular modeling. Duties include: teaching introductory physics for life/health science majors, course development in biophysics, establishing and participating in faculty/student research programs in biophysics and molecular modeling.

Illinois Benedictine College is a liberal arts college located in the research corridor of metropolitan Chicago with nationally recognized programs in the sciences. Initially, applicants should send curriculum vitae and a statement of teaching and research interests by December 30, 1994, to: **Dr. Duane Buss, Chairman, Search Committee, Illinois Benedictine College, 5700 College Road, Lisle, IL 60532. Telephone: 708-960-1500 x1562.** *Illinois Benedictine College is an Affirmative Action/Equal Opportunity Employer; women and minority candidates are especially encouraged to apply.*

# Tenure-Track And Postdoctoral Opportunities.

Listed below are a few of the outstanding opportunities for conducting research that are now available at the National Institutes of Health.

---

## Tenure-Track Positions Associate Professor Equivalent

### Cell Interactions in 3-D Systems Joshua Zimmerberg, MD, PhD

Position available to develop an independent research program on cell interactions in three dimensional systems. Individuals of the highest caliber with broad research interests in cell behavior including cell locomotion, cell fusion, cell adhesion and inter-membrane contacts in a complex micro environment and with substantial experience in cell biology, biophysics and microscopy should apply. Candidates should be capable of developing new experimental systems and new methods to study normal and pathological cell interactions within tissues. Applicants must have an MD and/or PhD degree and at least five years of postdoctoral experience including the supervision of more junior fellows. Laboratory of Theoretical and Physical Biology (OE-61), NICHD, Building 10, Room 10D14, 10 CENTER DRIVE MSC 1855, BETHESDA MD 20892-1855.

### Ecocytosis and Viral Fusion Joshua Zimmerberg, MD, PhD

Position available to develop an independent research program that will complement ongoing research on exocytosis and viral fusion. Particular preference will be given to those individuals interested in the mechanisms of lipid bilayer rearrangements in biological fusion. Candidates should have broad expertise in electrophysiological and biophysical techniques and experience in work with model membranes (planar lipid bilayers and liposomes). Applicants must have at least five years postdoctoral experience which includes supervision of more junior fellows. Laboratory of Theoretical and Physical Biology (OE-61), NICHD, Building 10, Room 10D14, 10 CENTER DRIVE MSC 1855, BETHESDA MD 20892-1855.

---

## Postdoctoral Positions

### Developmental Biology Igor B. Dawid, PhD

The molecular basis of vertebrate embryogenes, in particular mesoderm induction and axis formation, and the early differentiation of the nervous system, is being studied in *Xenopus laevis* and in the zebrafish. A major focus is on the regulation and function of LIM class homeobox genes in pattern formation. Experience in molecular and/or developmental biology is preferred. Laboratory of Molecular Genetics (OE-61), NICHD, Building 6B, Room 413, 10 CENTER DR MSC 2790, BETHESDA MD 20892-2790.

### Developmental Gene Expression and Chromatin Structure Ann Dean, PhD

Embryonic globin gene expression is being studied, especially as it relates to chromatin structure. Approaches include *in vitro* and *in vivo* analysis of functional promotor and enhancer elements, *in vitro* transcription of DNA templates assembled into nucleosomes, and structural studies using minichromosomes. Applicants should have

training in molecular/cell biology and an interest in the role of chromatin structures in the molecular basis of development. Laboratory of Cellular and Developmental Biology (OE-61), Building 6, Room B1-08, 6 CENTER DR MSC 2715, BETHESDA MD 20892-2715.

### Ion Homeostasis and Cell Injury Elizabeth Murphy, PhD

Changes in ion transport and homeostasis appear to be involved in apoptotic cell death. Studies focus on measuring changes in intracellular calcium, pH, sodium and magnesium in isolated cells using fluorescent indicators in cells stimulated to undergo apoptosis. Alterations in signal transduction pathways which are responsible for the ionic alterations are also under study. Applicants must have experience in ion measurements using fluorescent indicators or experience with cell culture or molecular biology and have less than five years of postdoctoral experience. Laboratory of Molecular Biophysics (OE-61), NIEHS, P.O. Box 12233, MD 17-05, Research Triangle Park, NC 27709.

### Retroviral Entry Mechanisms Maribeth V. Eiden, PhD

The receptors for the amphotropic murine leukemia viruses (A-MuLVs) and gibbon ape leukemia viruses (GaLVs) have been recently shown to function as cellular phosphate symporters. A position is available to investigate the process of retroviral entry by characterizing the regions of these viruses involved in the process of infection and the regions of their receptors that are critical for receptor/transporter function. Applicants must have less than five years postdoctoral experience. Laboratory of Cell Biology (OE-61), NIMH, Building 36, Room 2D10, 36 CONVENT DR MSC 4068, BETHESDA MD 20892-4068.

### Additional Postdoctoral Fellowship Opportunities

For an on-line listing of additional postdoctoral openings, you may access the NIH EDNET Bulletin Board POSTDOC conference via Internet ([wylbur.cu.nih.gov](http://wylbur.cu.nih.gov)) or modem (1,301-402-2221 or 1,800-358-2221) with parameters set at "7,Even,1". When connected to NIH, type in "vt100" for terminal emulation, "F5E" for initials, and "AJL1" for account number.

The Postdoctoral Research Fellowship Opportunities catalog, which describes intramural laboratories at the NIH, is also available by request. An electronic version of the catalog may be accessed via the Internet using either the Gopher Information System ([gopher.nih.gov](http://gopher.nih.gov)) or the World Wide Web (<http://www.nih.gov/>). When connected, select *Research Opportunities at the NIH Office of Education*. If you would like to request a catalog or have further questions, please contact the Office of Education, Building 10, Room 1C129, 10 CENTER DR MSC 1158, BETHESDA MD 20892-1158, 301-496-2427, Fax 301-402-0483.

### To Apply

If you hold a doctoral degree (e.g., PhD, MD/PhD, MD, DO, DDS, DMD or DVM) accompanied by previous laboratory research experience, and would like to be considered for one of these positions, please send a cover letter, *curriculum vitae*, bibliography, and statement of research interests to the address listed with each position. In addition, please arrange to have letters of recommendation sent from three scientists who can provide an evaluation of your qualifications.



# National Institutes Of Health

Office of Education

The NIH is an Equal Opportunity Employer



## POSITIONS OPEN

### BRANDEIS UNIVERSITY Theoretical/Computational Neuroscientist

The Volen National Center for Complex Systems at Brandeis University seeks candidates for a tenure-track **ASSISTANT PROFESSORSHIP** in Computational Neuroscience. This position is part of a new Center for Theoretical Neuroscience funded by a grant from the Alfred P. Sloan Foundation. We are interested in theorists with strong interests and demonstrated commitment to research relevant to neuroscience. Candidates are expected to have Ph.D.'s (or the equivalent) in Mathematics, Physics, Computer Science or another quantitative discipline. The successful candidate will be appointed in an appropriate academic department(s). The position carries a reduced teaching load and summer salary for three years. Prospective candidates should send a curriculum vitae, statement of research interests, and arrange for three letters of recommendation to be sent directly to:

**Search Committee  
Theoretical/Computational Neuroscientist  
Volen Center  
Brandeis University  
Waltham, MA 02254**

Applications from minorities and women are especially welcome. Consideration of completed applications will start after January 1, 1995, and will continue until the position is filled, although candidates are strongly encouraged to submit completed applications as soon as possible.

*Brandeis University is an Equal Opportunity/Affirmative Action Employer.*

### NORTH CAROLINA STATE UNIVERSITY Two Assistant Professorships Department of Genetics

The Department of Genetics at North Carolina State University invites applications for two tenure-track **ASSISTANT PROFESSOR** appointments. Molecular Genetics: Specific area of research and organism studied are open. Applicants should submit curriculum vitae, a description of research plans and teaching interests and arrange to have three references sent to: **Dr. Steven Spiker**, Chair, Molecular Genetics Search Committee. Experimental Molecular Evolution: Applicants with expertise in molecular evolution/population genetics should submit curriculum vitae, a description of research plans and teaching interests, transcripts of graduate work, reprints and the names and addresses of three referees to: **Dr. William R. Atchley**, Chair, Molecular Evolution Search Committee. Applicants should have a Ph.D. or equivalent degree and postdoctoral experience. The successful candidates are expected to participate in departmental teaching, develop a strong extramurally funded research program, train graduate students, interact with research faculty and participate actively in the operations of the department. Applications should be sent to the appropriate search committee chair, **Department of Genetics, North Carolina State University, Raleigh, NC 27695-7614**. The deadline is January 15, 1995. *North Carolina State University is an Affirmative Action/Equal Opportunity Employer and is eager to identify minority persons and women with appropriate qualifications.*

### ASSISTANT PROFESSOR OF BIOLOGY

Hamline University invites applicants with teaching and postdoctoral experience for a tenure-track appointment as **ASSISTANT PROFESSOR** of Biology, to begin on September 1, 1995. Our program emphasizes undergraduate research opportunities, especially cross-disciplinary efforts, and is supported by modern laboratories, state-of-the-art instrumentation, and high performance computing facilities. Teaching responsibilities include introductory animal biology, upper-level courses in area of specialty, and supervising student research. The successful candidate will develop an externally funded research program in animal biology suitable for undergraduate student involvement. In particular, the ability to engage students in projects involving computational analysis and/or modeling is preferred. Send curriculum vitae, all academic transcripts, selected reprints, statement of teaching and research philosophy, and three letters of recommendation to: **Dr. John Brennan**, Department of Biology, Hamline University, 1536 Hewitt Avenue, St. Paul, MN 55104. Review of applications will begin on January 10, 1995. *Hamline University is an Affirmative Action/Equal Opportunity Employer and encourages applications from women and minority candidates.*

## POSITIONS OPEN

### YALE UNIVERSITY School of Forestry and Environmental Studies Ecologist Position

The Yale School of Forestry and Environmental Studies seeks to fill a faculty position at the **ASSISTANT PROFESSOR** level. We seek a candidate with research interests that actively combine modeling spatial dynamics with field tests at spatial scales relevant to natural populations and communities. Candidates should be interested in the application of their work to landscape ecology, conservation biology, conservation and land-use planning, or ecosystem management. Duties will include teaching two graduate courses with one being a course in landscape ecology, participating in the conservation biology graduate program, and interacting with colleagues and students in both natural and social sciences in an interdisciplinary professional/graduate program.

Please send curriculum vitae; statement of research and teaching interests; three letters of recommendation; and reprints and other examples of academic and professional work to:

**Professor Kristiina A. Vogt, Chair  
Ecology Search Committee  
Yale University  
School of Forestry and Environmental Studies  
370 Prospect Street  
New Haven, CT 06511**

Deadline for receipt of applications is 31 January 1995. The position will be available 1 July 1995. For further information concerning the position described above, call 203-432-5076.

*Yale University is an Equal Opportunity/Affirmative Action Employer. Women and minority group members are encouraged to apply.*

The Biology Department of St. Lawrence University seeks to fill three faculty positions at the **ASSISTANT PROFESSOR** level. Successful applicants will be expected to develop an active research program that will involve undergraduates. Teaching expectations are four courses a year.

**Vertebrate Zoologist** (tenure-track): Field-oriented courses in Biology and in support of our Environmental Studies-Biology combined major. Previous offerings have included Conservation Biology, Ornithology, Vertebrate Natural History, Tropical Ecology, Comparative Vertebrate Morphology.

**Invertebrate Zoologist** (tenure-track): Field-oriented courses in Biology and in support of our Environmental Studies-Biology combined major. Previous offerings have included: Freshwater Biology, Invertebrate Biology, Environmental Biology (non-majors), Entomology, and Marine Biology (summer). The successful candidate will participate in the University's First Year Program prior to being considered for tenure.

**Developmental Geneticist** (term appointment, up to three years). Will teach Genetics and Developmental Biology and will also participate in the University's First Year Program. This program is based on residential colleges and stresses interdisciplinary approach to teaching and learning.

Appointments begin August 1995. Send curriculum vitae, three letters of reference, plus a statement of teaching and research interests by January 10, 1995, to:

**Dr. Karl McKnight  
Biology Department  
St. Lawrence University  
Canton, NY 13617**

*St. Lawrence University is an Affirmative Action/Equal Employment Opportunity Employer. Women, minorities, and persons with disabilities are encouraged to apply.*

### TWO ASSISTANT PROFESSOR POSITIONS IN MICROBIOLOGY

**Department of Microbiology  
Louisiana State University**

Applicants must have an earned doctorate, postdoctoral research experience and the ability to develop a strong independent research program. Applicants with demonstrated research expertise in any aspect of microbiology will be considered. A strong commitment to teaching undergraduate and graduate students is also required. Send curriculum vitae, a statement of research interests, relevant reprints, and the names of three references to: **Search Committee, Department of Microbiology, Louisiana State University, Baton Rouge, LA 70803**. Deadline is January 15, 1995, or until suitable candidates are identified. *Louisiana State University is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### ORGANISMAL BIOLOGY

The Biology Department of The University of Akron invites applications for two tenure-track faculty positions at the **ASSISTANT PROFESSOR** level in organismal biology to begin 28 August 1995. Areas of specialization are Ecology and Vertebrate Zoology. Preference will be given to candidates who also have expertise in one or more of the following areas: aquatic biology, field studies, and techniques in molecular biology.

Responsibilities include teaching in the department's core curriculum, an advanced undergraduate course, and a graduate course in an area of specialty; directing Masters' theses; and establishing an externally fundable research program. Involvement will be expected in an environmental education/field research program in conjunction with the Cuyahoga Valley National Recreation Area and in a joint Ph.D. program in organismal biology being planned with a nearby university.

The University of Akron is the third largest state university in Ohio with an enrollment over 26,000 students. It is situated in an urban setting near many and diverse cultural and recreational opportunities.

Review of applications will begin 2 January 1995 and will continue until suitable candidates are hired. Applicants should send a curriculum vitae, a statement of teaching/research interests, and three references to:

**Dr. Jerry Stinner, Chair  
Department of Biology  
The University of Akron  
Akron, OH 44325-3908**

### TEACHING OVERSEAS

The Department of Biology at the American University of Beirut (AUB) in Beirut, Lebanon, invites applications for three faculty positions in the fields of Developmental Biology, Plant Systematics, and Marine Biology, starting October 1, 1995. Rank will normally be **ASSISTANT PROFESSOR**; usual contract is for three years. The Department offers both bachelor's and Master's degrees. Candidates will be expected to engage in research and supervise student research and thesis writing. The language of instruction is English.

Applicants should hold the Ph.D. in Biology, with postdoctoral teaching and/or research experience required, and are expected to teach both undergraduate and graduate courses in the Department.

Interested candidates should send a letter of application (with a copy to the Director of Personnel, c/o AUB New York Office) and a curriculum vitae, and should arrange for three letters of reference to be sent, before February 15, 1995, to: **Dean, Faculty of Arts and Sciences, American University of Beirut, c/o AUB New York Office, 850 Third Avenue, 18th Floor, New York, NY 10022-6297 USA**. Incomplete and/or late applications will not be considered.

*AUB is an Affirmative Action/Equal Opportunity Employer. U.S. passports are presently invalid for travel to, in or through Lebanon, and for residence in Lebanon, by order of the Department of State, and therefore applications from individuals who would travel to or reside in Lebanon on a U.S. passport cannot at this time be considered.*

### FACULTY POSITION HOST-PARASITE RELATIONSHIPS ILLINOIS STATE UNIVERSITY

The Department of Biological Sciences, Illinois State University seeks to hire a person for a tenure-track **ASSISTANT PROFESSOR** position. Applications from persons with research interests in various aspects of host-parasite relationships including molecular, genetic, ecological and evolutionary questions are solicited. Preference will be given to candidates whose research complements existing expertise in cell biology (including immunology), ecology, evolution, or microbiology. The successful candidate will contribute to teaching in the undergraduate and graduate programs, supervise M.S. and Ph.D. students, and establish an extramurally funded research program. Applications should include curriculum vitae, statement of research and teaching interests, representative reprints, and three letters of recommendation. Submit applications to: **Dr. Brian J. Wilkinson, Chair, Host-Parasite Search Committee, 4120 Department of Biological Sciences, Illinois State University, Normal, IL 61790-4120**. Deadline to assure review of applications is January 15, 1995. *Illinois State University is an Equal Opportunity/Affirmative Action Employer.*

National Institute on Aging  
National Institutes of Health

### Postdoctoral Positions in Vascular Smooth Muscle Cell Signal Transduction

A postdoctoral position is available for research in one of the following two areas:

1) The regulation of vascular smooth muscle migration with particular emphasis on elucidating the changes in intracellular signalling pathways that account for the increased migration of smooth muscle cells in and from aging animals;

2) The intracellular signalling pathways associated with activation of the cytokine-like receptor(s) for advanced glycation endproducts and the role of these pathways during vessel injury and aging.

Women, minorities and persons with disabilities who meet the eligibility requirements are encouraged to apply. Salary will be commensurate with qualifications and experience.

Mail CV by 12-30-94 to National Institute on Aging, Gerontology Research Center, 4940 Eastern Avenue, Baltimore, MD 21224, Attention: Edward G. Lakatta, M.D., Chief, Laboratory of Cardiovascular Science.

For further information, contact Edward G. Lakatta, M.D. at (410) 558-8202.

NIH is an Equal Opportunity Employer

## Help Deliver The Next Generation Of Pharmaceuticals.

Since 1888, Abbott Laboratories has extended the boundaries of drug discovery to become a global leader in the delivery of new and innovative health care products. Now, as our phenomenal success continues, you could join our Pharmaceutical Products Division and have a direct impact on the future of pharmaceuticals.

### RESEARCH COMPUTING

**Sr. Scientist...** With responsibility for designing and developing computer systems for scientific data, you will work with R&D scientists to determine requirements and implement systems. You will also provide leadership to project teams, write status reports to users and management, and work with a variety of other scientific data management tools.

We require an MS in Science or Engineering with a minimum of 8 years experience including at least 4 years of experience in software analysis, design, and development in a scientific environment. We also require knowledge of programming languages such as C or Fortran, as well as knowledge of relational databases. Working knowledge of Macintosh or other PCs is a plus. **Reply to Job# PH49384.**

**Associate Scientist...** You will provide programming support on software development teams, and apply scientific and mathematical data analysis techniques to pharmaceutical data. You will also learn to use and apply new computer technology to support R&D.

We require an MS in Science or Engineering along with a minimum of 2 years experience in software system development in a scientific research environment. We also require programming skills in Fortran and C, as well as experience with CASE tools, 4th generation languages, and project management tools. Experience with VAX/VMS or Macintosh software development is a plus. **Reply to Job# HD49386.**

**Associate Scientist...** You will plan, develop, and implement the R&D end user training program. This will include curriculum design, development and scheduling; training on and development of courseware; monitoring consulting services; and managing training-related projects.

We require an MS in Education along with 8+ years of training/educational experience, 2+ years of training program management experience, and 2+ years of computer software/hardware experience. **Reply to Job # SB49418.**

Abbott provides an excellent salary and benefits package including profit sharing and a stock retirement plan. We are located in an attractive suburban area, approximately 30 miles north of Chicago. For confidential consideration, please send a resume and salary history (including appropriate Job#) to: **Linda DeLavallade, D-583, AP6B, Abbott Laboratories, One Abbott Park Rd., Abbott Park, IL 60064.** Abbott is an Affirmative Action Employer/Smoke-Free Environment.

### ABBOTT LABORATORIES



Quality  
Health Care  
Worldwide  
Since 1888

*Experience The Abbott Edge.*

### POSTDOCTORAL FELLOWSHIPS



The Hipple Cancer Research Center announces new postdoctoral fellowships in two divisions.

#### ● Biological Response Modifiers

- **Head:** Dr. Sohan L. Gupta, Wallace Chair for Cancer Research
- **Subject:** interferon mechanism of action on tumor cells
- **Requirements:** Ph.D. in biochemistry or molecular biology, experience in working with nucleic acids and molecular biology techniques

#### ● Biology of Cancer Metastasis

- **Head:** Dr. Emilio Barberá, Senior Cancer Scientist
- **Subject:** the molecular and cellular mechanisms of metastasis
- **Requirements:** Ph.D. in immunology, experience in T cell energy and molecular biology methods.

Send your curriculum vitae and the names of at least three referees to:

Diane M. Smith  
Hipple Cancer Research Center  
4100 S. Kettering Blvd., Dept. S-100  
Dayton, Ohio 45439-2092

The Hipple Cancer Research Center provides a creative environment, is affiliated with area universities and hospitals and is supported by private philanthropy and NCI peer-reviewed grants and contracts.



## POSITIONS OPEN

### PLANT BIOCHEMIST

The Institute of Biological Chemistry at Washington State University invites applications for a tenure-track position at the **ASSISTANT PROFESSOR** level. The position is 100% research with a 12-month appointment beginning September 1, 1995. Teaching at the graduate level is encouraged. Applicants must have a Ph.D. or equivalent, postdoctoral experience, and an established record of research using biochemical and molecular approaches relevant to basic plant biology and agriculture. The ability and commitment to build a strong, well-funded program of international stature is essential. The Institute provides an excellent research environment with more than 100 scientists, expansive growth facilities, modern equipment, and ready access to specialized methods and analytical services. Candidates should submit a curriculum vitae, statement of research interests, and description of future plans. In addition, applicants should arrange for three letters of reference to be sent to: **Dr. John Browse, Search Committee Chair, Institute of Biological Chemistry, 467 Clark Hall, Washington State University, Pullman, WA 99164-6340. Telephone: 509-335-2293; FAX: 509-335-7643; Email: browse@WSUVM1. Deadline: December 12, 1994, or until a suitable candidate is identified. An Equal Opportunity Employer/Affirmative Action/ADA.**

### PLANT EVOLUTIONARY ECOLOGIST

The Department of Biology at the University of Missouri-St. Louis announces a tenure-track faculty position at the **ASSISTANT PROFESSOR** level in the area of plant evolutionary ecology. Preference will be given to applicants whose research includes a quantitative genetic or theoretical approach. Teaching responsibilities would include: introductory biology for majors, biometry, and a graduate course in applicant's area of specialization. Applicants should have teaching experience in one or more of these courses. A letter of application, curriculum vitae, statements of research and teaching interests, selected reprints, and names for three letters of reference should be sent by December 31, 1994, to: **Search Committee Chair, Department of Biology, University of Missouri-St. Louis, 8001 Natural Bridge Road, St. Louis, MO 63121-4499. The University of Missouri-St. Louis is an Affirmative Action/Equal Opportunity Employer committed to excellence through diversity.**

### DEPARTMENT OF BIOLOGY VASSAR COLLEGE

**CELL BIOLOGIST**—We seek a cell biologist who is committed to undergraduate education to fill a temporary (one year) position at the rank of **ASSISTANT PROFESSOR** beginning August 1995.

A Ph.D. is required. Postdoctoral work and teaching experience are desirable. The successful candidate will be expected to teach introductory cell biology and two of the following: immunology, advanced cell biology, microbiology.

Please send curriculum vitae, a statement of teaching interests, a description of current and planned research, and three letters of reference to: **Robert B. Suter, Chair, Department of Biology, Vassar College, Poughkeepsie, NY 12601 by 31 December 1994. Affirmative Action/Equal Opportunity Employer. Women and minorities encouraged to apply.**

### ASSISTANT/ASSOCIATE PROFESSORS NEUROSCIENTIST/ NEUROPHARMACOLOGIST

Applications are invited for two **TENURE-TRACK POSITIONS** in the Department of Cell and Neurobiology at the University of Southern California School of Medicine. Applicants should have a Ph.D. or M.D. degree with at least three years of postdoctoral experience. Academic rank is to be commensurate with qualifications and experience. The successful candidate will be expected to establish a vigorous, externally funded research program in the area of vision or circadian rhythm and participate in medical school and graduate education in neuroscience, anatomy or pharmacology.

Applicants should send an introductory letter; names, addresses and telephone numbers of three references; and copies of most significant recent publications by January 15, 1995, to: **Dr. Cheryl M. Craft, Chair, Department of Cell and Neurobiology, University of Southern California School of Medicine, 1333 San Pablo Street, BMT401, Los Angeles, CA 90033. USC is an Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

### HUMBOLDT STATE UNIVERSITY COLLEGE OF NATURAL RESOURCES AND SCIENCES Announces

#### Three Tenure-Track Assistant Professor Positions

**BIOLOGICAL SCIENCES:** Bryology and General Botany. Teach courses in non-vascular plants and general botany. Mammalogy and Human Anatomy. Teach courses in mammalogy, marine mammalogy, human anatomy, and general zoology. Candidates for both positions must have Ph.D. in biological science, advise undergraduate and Master's students, conduct research, serve on committees. **Telephone: 707-826-3245; FAX: 707-826-3201.**

**CHEMISTRY:** Biochemistry, General Chemistry, and/or Organic Chemistry. Ph.D. in Chemistry or Biochemistry. Teaching-oriented department with undergraduate degrees in chemistry, biochemistry and environmental toxicology. **Telephone: 707-826-3277; FAX: 707-826-3279.**

Send curriculum vitae, three letters of recommendation, and academic transcripts to the department search committee: **Humboldt State University, Arcata, CA 95521. Post by: February 1, 1995. Starting date: August 1995.**

*An Equal Opportunity/Affirmative Action/Title IX Employer. Women and minorities encouraged to apply.*

The University of Southern Indiana invites applications for a tenure-track position as **ASSISTANT PROFESSOR** in Vertebrate Physiology in the Biology Department beginning fall 1995. The candidate should be a broadly trained biologist/physiologist Ph.D. with expertise in one or more of the following areas: toxicology, xenobiology, neurophysiology, and/or developmental biology. Successful applicant must be an advocate of strong undergraduate teaching supported by the involvement of undergraduates in his/her research activities. Institutional funds for research are available but limited; externally funded research is encouraged. The University is committed to excellence in teaching, scholarship and professional activity, and service to the University and the community. Review of applications will begin February 15, 1995, and continue until the position is filled. Submit letter of application, curriculum vitae, a brief statement of teaching and research goals, and the names and addresses of three professional references to: **Dr. Jackson L. Marr, Biology Department Chair, University of Southern Indiana, 8600 University Boulevard, Evansville, IN 47712. An Affirmative Action/Equal Opportunity Employer.**

### VASCULAR BIOLOGIST

A tenure-track position and support are available at the University of Texas Medical School at Houston for appointment of a senior investigator at either the level of **ASSOCIATE PROFESSOR** or **PROFESSOR**. The applicant should have achieved national recognition in the areas of cellular and molecular biology of the vascular system. The combined M.D./Ph.D. degree or either the M.D. or Ph.D. degree is required. Some background and training within the discipline of Pathology are desirable. The deadline for receipt of applications is February 27, 1995, or until the position is filled. Send curriculum vitae and list of references to: **Dr. L. Maximilian Buja, Professor and Chairman, Department of Pathology and Laboratory Medicine, The University of Texas Medical School at Houston, 6431 Fannin, MSB 2.136, Houston, TX 77030. The University of Texas is an Equal Opportunity Employer. Women and minorities are encouraged to apply.**

**DEVELOPMENTAL BIOLOGIST.** The Department of Biology at Swarthmore College invites applications for a one-year faculty position, at the **ASSISTANT PROFESSOR** level, beginning September 1995. We seek applicants with a Ph.D. in animal or plant developmental biology who have research experience and a strong interest in undergraduate teaching. Teaching duties will include two courses with laboratories in the area of developmental biology and participation in a team-taught seminar in evolution. Interested individuals should submit (i) a curriculum vitae, (ii) three letters of recommendation, and (iii) a statement of teaching and research by January 1, 1995, to: **Dr. Scott F. Gilbert, Department of Biology, Swarthmore College, Swarthmore, PA 19081-1937.**

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

## POSITIONS OPEN

### FACULTY POSITION IN MACROMOLECULAR CRYSTALLOGRAPHY

The Department of Biophysics at the University of Rochester Medical Center is seeking candidates for a tenure-track faculty position in macromolecular crystallography. The new recruit will join a growing structural biology group with access to state-of-the-art diffraction and magnetic resonance facilities. Good opportunities exist for collaboration. Applicants should have experience in crystal growth, data collection and structural solution, refinement and analysis, as applied to problems of biological interest. An appointment at the **ASSISTANT PROFESSOR** level is anticipated, but applications from all ranks are welcome. The successful candidate will be expected to conduct an active, independent, research program and to participate in the Department's teaching efforts. Please send a curriculum vitae, a summary of proposed research, representative reprints, and three letters of recommendation to:

**Crystallography Search Committee  
Department of Biophysics  
University of Rochester  
School of Medicine and Dentistry  
601 Elmwood Avenue  
Rochester, NY 14642**

*The University of Rochester is an Equal Opportunity/Affirmative Action Educator and Employer.*

The Department of Psychiatry and Behavioral Sciences at Stanford University School of Medicine is searching for a **RESEARCH ASSISTANT PROFESSOR** with requisite education and training to join a laboratory engaged in psychoneuroendocrinological research in primates. Applicants with interests in basic psychobiological processes relevant to an understanding of human affective disorders are especially welcome. Application closing date is 30 days after publication of this advertisement. Stanford University is committed to increasing representation of women and members of minority groups on its faculty and particularly encourages applications from such candidates. Send curriculum vitae, names of at least three references, representative publications, and a description of training and research interests to: **Roland Ciaranello, M.D., Professor and Chair of Psychobiology Search Committee, Department of Psychiatry and Behavioral Sciences, School of Medicine, Stanford University, Stanford, CA 94305.**

Wittenberg University invites applications for a **VISITING INSTRUCTOR** or **VISITING ASSISTANT PROFESSOR** in Biochemistry 1995-96. The teaching assignment will include biochemistry courses and general chemistry. This position may continue for a second year with teaching responsibilities in general chemistry and/or organic chemistry. Candidates should have a strong interest in teaching in the liberal arts and sciences context. The Chemistry Department has a staff of 5.5 FTE Ph.D. faculty and a Department Assistant. Wittenberg is committed to advancing cultural pluralism through hiring women and minorities. Send résumé, transcripts, a statement of teaching philosophy, and three letters of recommendation to: **Dr. David C. Finster, Chemistry Department, Wittenberg University, P.O. Box 720, Springfield, OH 45501. Review of applications will begin on December 29, 1994. Wittenberg University is a four-year, undergraduate liberal arts and sciences college and an Affirmative Action/Equal Opportunity Employer.**

### VERTEBRATE PHYSIOLOGIST

The Department of Biological Sciences at Illinois State University seeks applicants for a tenure-track appointment at the **ASSISTANT PROFESSOR** level. Applicants should be broadly trained and have demonstrated research potential through postdoctoral experience and recent publications. Individuals with interests in neuro- or endocrine physiology are especially encouraged to apply. The successful candidate will be expected to maintain an independent, extramurally funded research program, and to participate in the training of M.S. and Ph.D. candidates. Teaching responsibilities will include a graduate course in the candidate's specialty and an undergraduate course in physiology. Applicants should send their curriculum vitae, reprints of recent publications, a statement of research and teaching interests, and three letters of recommendation by January 5, 1995, to: **Dr. David Borst, Department of Biological Sciences, Illinois State University, Normal, IL 61790-4120. Illinois State University is an Equal Opportunity/Affirmative Action Employer.**

## BIOPROCESS SCIENTISTS/ ENGINEERS and CELL BIOLOGISTS

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

### BIOPROCESS SCIENTISTS/ ENGINEERS

Opportunities are available for Bioprocess Scientists and Engineers in the following areas of research.

**CELL CULTURE:** Responsible for process development, scale up and optimization of mammalian and insect cell cultures, for recombinant protein production, at the pilot-scale level. Must have previous experience with SIP/CIP bioreactor systems for mammalian/insect cell culture.

**PROTEIN PURIFICATION:** Responsible for downstream processing and purification of recombinant proteins. Must have previous experience with preparative HPLC systems for protein purification. Knowledge of analytical HPLC/HPCE for protein characterization is desirable.

**EXPERIENCE:** Candidates must possess a Ph.D. in Bio/Chemical Engineering or related discipline and have a minimum of 1-3 years of industry experience. Must be able to work effectively in an interdisciplinary environment and must demonstrate excellent written and oral communication skills. Computer skills are essential and knowledge of cGMPs are highly desirable.

### CELL BIOLOGISTS

As a member of the Cell Biology Department, you would join a highly interactive team responsible for establishing experimental systems to evaluate the function of a broad range of potential protein therapeutic agents. You will also interact closely with members of the Molecular Biology and Protein Expression Departments. Qualified candidates will possess an M.D. or Ph.D. degree with at least 3 years post-graduate experience. Applicants with experience in the investigation of cell proliferation and differentiation, cell adhesion and migration, cellular immunology, receptor-ligand interactions, receptor signal transduction and other systems related to the control of erythro-, myelo- and lympho-poiesis are encouraged to apply.

For immediate consideration, please send your curriculum vitae to Human Resource Department, Human Genome Sciences, Inc., 9410 Key West Avenue, Rockville, MD 20850. FAX: (301) 309-8512. An Equal

Opportunity  
Employer.



# HGS

Human Genome Sciences, Inc.

Dedicated To Discovery For Health

National Institutes of Health • National Institute of Allergy and Infectious Diseases •  
Division of Acquired Immunodeficiency Syndrome

## CHIEF DRUG DEVELOPMENT AND CLINICAL SCIENCES BRANCH THERAPEUTICS RESEARCH PROGRAM

Location: Bethesda, Maryland

Announcement No.: AI-94-0089

The Division of AIDS, Therapeutics Research Program, NIAID/NIH, is seeking a Chief for its newly established Drug Development and Clinical Sciences Branch. This individual is responsible for providing overall leadership for, and the general guidance, in the areas of preclinical development of experimental therapies: identification, validation, and standardization of immunologic and virologic markers; quality assurance programs and accreditation policies for immunology, virology, and pharmacology laboratories, and; initiative development to support immunology, virology, pharmacology, and drug development laboratory research as they relate to the DAIDS/NIAID HIV research agenda. The Division plans and directs a national and international extramural research program into the causes, diagnosis, prevention, and treatment of HIV and its associated sequelae.

Desirable qualifications include a Ph.D. and/or M.D. degree, extensive postgraduate research experience in the areas of virology, immunology, and/or pharmacology, demonstrated ability to direct biomedical research efforts, strong management skills, broad knowledge of both basic and clinical research aspects of infectious diseases and an understanding of the policies, procedures, and mechanisms used within the Institute, DHHS, and PHS for accomplishing research through extramural activities. U.S. citizenship is required. NIH is an Equal Opportunity Employer. Position targeted for EEO recruitment efforts.

This is a GM-15 Civil Service position. A recruitment or relocation bonus of up to 25% of base pay may be available. Physicians may be eligible for a Physician's Comparability Allowance of up to \$20,000 per year.

Selection for this position will be based solely on merit with no discrimination for non-merit reasons such as race, color, religion, gender, national origin, disability, age, or sexual orientation.

Persons interested in this position may contact Mr. Thomas Voskuhl, Associate Director for Program Operations, DAIDS, at 301-496-0545 or submit an SF-171 (Application for Federal Employment) and a curriculum vitae by December 31, 1994 to: Ms. Sheila Conner, NIAID Personnel Office, Solar Building, Room 4B15, 6003 Executive Boulevard, Rockville, MD 20892-7260 (301-402-0957).

## STATE UNIVERSITY OF NEW YORK AT BUFFALO

### DEPARTMENT OF BIOCHEMISTRY

The Department of Biochemistry in the School of Medicine and Biomedical Sciences invites applications for faculty openings at the ASSISTANT, ASSOCIATE or FULL PROFESSOR levels for TWO twelve-month, state-funded, tenure-track positions. Applicants should have a Ph.D. or M.D. degree and at least two years of post-doctoral experience. Although applicants from all areas of biochemistry and molecular biology are encouraged to apply, we are especially seeking candidates who have expertise in molecular mechanisms of regulation in eukaryotic systems. Entry-level candidates should have demonstrated outstanding research ability and show promise for contributing to departmental and interdisciplinary training programs for graduate and professional students. Senior-level candidates should have a well-established, nationally-recognized research program supported by major extra-mural funding. The Medical School enjoys interdisciplinary interactions with faculty throughout the University. The basic science departments in the Medical School are undergoing substantial expansion in faculty, concomitant with the opening in the summer of 1995 of a new 120,000 square-foot research building. A major structural biology program also has been initiated. These developments present an uncommon opportunity for determined scientists to advance their research goals in an exciting environment. Send a complete Curriculum Vitae, a carefully prepared statement of research interests and future plans, reprints of recent publications and the names, addresses and FAX numbers of at least three referees to: Faculty Search Committee, Biochemistry Department, 140 Farber Hall, State University of New York, 3435 Main Street, Buffalo, NY 14214-3000. Screening will begin immediately. To be assured of full consideration, applications should be received by February 1, 1995. The State University of New York is an Equal Opportunity/Affirmative Action Employer.

## Massachusetts Institute of Technology

### Faculty Position Visual Perception

The Department of Brain and Cognitive Sciences anticipates making a tenure track appointment in human visual perception. Candidates should have a strong experimental research program, along with a good knowledge of physiological and computational approaches to vision. Appropriate research areas include mid-level vision, visual learning, object recognition, attention, and perceptual organization. Responsibilities include undergraduate and graduate teaching and research supervision.

Applications should include a brief cover letter stating research and teaching interests, a curriculum vitae, and three letters of recommendation. Representative reprints may be included. The deadline for applications is February 15, 1995. Send applications to: Chair, Visual Perception Search Committee, Dept. of Brain and Cognitive Sciences, E25-406, MIT, 77 Massachusetts Avenue, Cambridge, MA 02139-4307.

# MIT

MIT is an Equal Opportunity/Affirmative Action Employer  
Qualified women and minorities are encouraged to apply.  
MIT is a non-smoking environment



## POSITIONS OPEN

### FACULTY POSITION IN VASCULAR BIOLOGY

Applications are invited for a tenure-track position at the ASSISTANT/ASSOCIATE PROFESSOR level to join a core of faculty forming a Program in Vascular Biology at the University of Connecticut Health Center School of Medicine. This is a multidisciplinary program that aims to bridge clinical and basic science problems in vascular biology. Preference will be given to applicants (Ph.D. or M.D.) with strong records in areas of endothelial or vascular smooth muscle cell biology using modern approaches. The successful candidate will be expected to develop an independent, externally funded research program, and participate in the teaching program. To apply, send curriculum vitae, description of research interests, and the names of three individuals who might write in their behalf before January 15, 1995, to: **Dr. Barbara E. Ehrlich, Chair, Vascular Biology Search Committee, Department of Physiology, University of Connecticut Health Center School of Medicine, 263 Farmington Avenue, Farmington, CT 06030-3505.**

*An Affirmative Action/Equal Opportunity Employer. Minorities/Female/Disabled/Veterans.*

### FACULTY FOR THE INSTITUTE FOR CARDIOVASCULAR SCIENCES Georgetown University Medical Center

The Institute for Cardiovascular Sciences (ICS) at Georgetown University seeks talented and qualified individuals at the rank of ASSISTANT or ASSOCIATE PROFESSOR with expertise in molecular cardiovascular biology. Preference will be given to those who have already demonstrated excellence in basic research through original publications and peer-reviewed research support. Interested individuals may write to: **ICS Search Committee, Attn: Dr. Raymond L. Wootley, Georgetown University Medical Center, SE 401 Med-Dent, 3900 Reservoir Road, NW, Washington, DC 20007.**

### ASSISTANT PROFESSOR DEPARTMENT OF BIOLOGICAL SCIENCES THE UNIVERSITY OF TEXAS AT EL PASO

University of Texas at El Paso seeks a tenure-track ASSISTANT PROFESSOR using modern approaches to study host/pathogen interactions. Candidates will be expected to develop a competitive externally funded research program, and must be committed to both undergraduate and graduate teaching. Applicants should submit a résumé, statement of research interests, teaching philosophy, and a list of three references (name, address, telephone) to: **Search Committee, UTEP, Department of Biological Sciences, El Paso, TX 79978-0519.** Review of applicants will begin on December 1, 1994. *University of Texas at El Paso does not discriminate on the basis of race, color, national origin, sex, religion, age or disability in employment or the provision of services.*

**ENDOCRINOLOGIST or PHYSIOLOGIST, tenure-track ASSISTANT PROFESSOR.** Teach upper-level undergraduate endocrinology, human anatomy and physiology. Also advise undergraduate, graduate students, conduct research. Ph.D., commitment to undergraduate education required. Start fall 1995. Send letter, curriculum vitae, statement of teaching philosophy and research interests, transcripts, three recommendation letters to: **Dr. James Parry, Chair, Department of Biology and Microbiology, University of Wisconsin-La Crosse, La Crosse, WI 54601. 608-785-8238.** Materials must be received by January 27, 1995.

All positions contingent on funding. Names of applicants who haven't requested confidentiality in writing, and all finalists, must be released on request. *Women, minorities encouraged to apply. Affirmative Action/Equal Opportunity Employer.*

**COASTAL MARINE MAMMALOGIST, ASSISTANT PROFESSOR (tenure-track)** beginning August 1995. Teaching/coordinating undergraduate core course in animal biology, teaching specialty course for advanced undergraduates and graduates, maintain active research program, and direct graduate students. Ph.D. with postdoctoral experience required. Send curriculum vitae, statement of teaching/research interests, graduate transcripts, and names of three references to: **Dr. David G. Lindquist, Department of Biological Sciences, University of North Carolina, Wilmington, NC 28403-3297** by 1 February 1995. *Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

### ASSISTANT PROFESSOR OF CHEMISTRY X-RAY CRYSTALLOGRAPHY OF BIOMOLECULES

Department of Chemistry  
Boston University

Applications are invited for a tenure-track faculty position at the level of ASSISTANT PROFESSOR, starting September 1995. The appointee is expected to establish a vigorous research program and to participate in the undergraduate and graduate teaching activities of the department. We are particularly interested in applicants specializing in X-ray crystallographic studies of biological macromolecules. Candidates whose work interfaces with initiatives in medicinal chemistry, neuroscience, and environmental sciences are particularly invited to apply. The Chemistry Department has an installed Rigaku AFC5R diffractometer, as well as excellent facilities in support of high-field NMR, fast kinetic studies, FTIR, and molecular modeling. A curriculum vitae, three letters of recommendation, and a detailed description of proposed research should be sent to: **Dr. Standish C. Hartman, Chairman, Department of Chemistry, Boston University, Boston MA 02215.** *Boston University is an Equal Opportunity/Affirmative Action Employer. We seek actively to attract women and minorities to our faculty.*

### PLANT BIOLOGIST

A tenure-track position as ASSISTANT PROFESSOR is available 16 August 1995 in the Department of Biology at Marquette University. Applicants should have a minimum of two years of postdoctoral experience. The successful candidate must develop an independent research program that attracts extramural support and complements existing departmental research in molecular or developmental biology, genetics, microbiology, or ecology. Teaching responsibilities include an annual one-semester undergraduate course in plant biology and, in alternate years, a graduate course or seminar. Send curriculum vitae, a one-page statement of research interests, and three letters of reference by 17 January 1995 to: **Dr. Walter W. Fredricks, Chairman, Box 112, Department of Biology, Marquette University, Milwaukee, WI 53233.** *An Affirmative Action/Equal Opportunity Employer.*

**BIOLOGY, TENURE-TRACK: Assistant/Associate Professor, Ursuline College.** To begin fall 1995. Required: Ph.D.; good communication skills; willingness to teach in collaborative setting at small liberal arts college. Must be able to teach courses in Applied Biology, Plant Science, Ecology. Preferred: Expertise and teaching experience in botany, ecology or field biology; administrative interest (department chair rotates); experience incorporating computer-based learning, data analysis, simulations into courses; experience seeking extramural funding. Salary: high \$20,000 (10 month contract). Send letter of interest, curriculum vitae, and three letters of reference to: **Dr. Laurence Mazzeno, VPAA, Ursuline College, 2550 Lander Road, Pepper Pike, OH 44124.** Deadline: December 20, 1994. *Ursuline College is an Equal Opportunity Employer/Minorities/Female/Disabled/Veterans.*

The University of Vermont College of Medicine is seeking both applications and nominations for outstanding candidates for the position of PROFESSOR and CHAIR of the Department of Molecular Physiology and Biophysics. Current strengths of the Department exist in studies of the structure-function relationships in motility and membrane control of smooth, cardiac, and skeletal muscle at the tissue, cellular and molecular level. Ph.D., M.D. or equivalent degree is required. Candidates should have a demonstrated record of: leadership, excellence in teaching, and productivity in research, as demonstrated by publications and funding support.

Applications will be accepted until the position is filled. Review of the candidates will begin by 15 January 1995. Curriculum vitae and a letter of interest should be sent to:

**Robert W. Hamill, M.D.  
Chair, Department of Physiology Search Committee  
Chair, Department of Neurology  
University of Vermont College of Medicine  
E-109 Given Building  
Burlington, VT 05405**

*The University of Vermont is an Equal Opportunity/Affirmative Action Employer. Women and people from diverse racial, ethnic and cultural backgrounds are encouraged to apply.*

## POSITIONS OPEN



Wayne State University

### CHAIRPERSON

### WAYNE STATE UNIVERSITY DEPARTMENT OF ANATOMY AND CELL BIOLOGY

The School of Medicine at Wayne State University (WSU) invites applications and nominations for the position of CHAIR of the Department of Anatomy and Cell Biology. The department has strong research programs in the areas of vision and neuroscience. During fiscal year 1993-1994, the department generated well over \$2.7 million in external research funding. We hope to attract an individual who will complement and/or enhance our areas of expertise. Candidates should have a distinguished record of scientific achievement, proven administrative and leadership skills, and a commitment to quality teaching in the anatomical disciplines.

Applicants should submit a statement of interest, a curriculum vitae and a brief list of references no later than December 1, 1994, to: **Gary W. Abrams, M.D., Chair, Search Committee, Kresge Eye Institute, 4717 St. Antoine, Detroit, MI 48201.**

*Wayne State University is an Equal Opportunity/Affirmative Action Employer. Wayne State University—People working together to provide quality service. All buildings, structures and vehicles at WSU are smoke-free.*

### CHAIR, DEPARTMENT OF PHYSICS BOSTON COLLEGE

Boston College invites applications for the position of PROFESSOR and CHAIR of the Department of Physics. A distinguished physicist with a proven record of professional accomplishment and a commitment to excellence in both undergraduate and graduate education is sought to guide the future development and expansion of the department. Candidates need vision and proven leadership abilities. Since strengthening scholarly research is among the highest priorities of the university, a demonstrated record of research and research funding is vital for the successful candidate. With highly competitive undergraduate and graduate programs and one of the most rapidly growing endowments in the United States, Boston College is in a unique position to offer this exciting and challenging career position. The Physics Department, with a present faculty of 10, offers B.S., M.S. and Ph.D. degrees. The current faculty strength is primarily in solid state physics, but this could be augmented by adding new areas of specialization. The Chair will have the opportunity to profoundly influence all aspects of the development of the department including the planning for the upcoming expansion and renovation of facilities as well as the addition of several new faculty positions over the next few years at both junior and senior levels. Boston College is a liberal arts university in the Jesuit tradition that enrolls 14,500 undergraduate and graduate students at its attractive suburban campus six miles west of the center of Boston. Nominations and applications with appropriate supporting material should be sent to: **Professor Christopher Hepburn, Chair, Physics Search Committee, c/o Office of the Dean, College of Arts and Sciences, Gasson Hall, Boston College, Chestnut Hill, MA, 02167.** Email: [Hepburn@bcvms.bc.edu](mailto:Hepburn@bcvms.bc.edu). The deadline for application is January 13, 1995. However, the review of applications will begin December 9, 1994. *Boston College is an Affirmative Action, Equal Opportunity Employer. Women and minority group members are encouraged to apply.*

**CHIEF OF GERONTOLOGY.** The Portland, Oregon, Department of Veterans Affairs Medical Center, a Dean's hospital and closely affiliated with Oregon Health Sciences University, is seeking an experienced academic leader to serve as CHIEF of the section of gerontology. Candidates should be experienced academic physicians with an excellent record of laboratory research, clinical and teaching skills and administrative accomplishments.

The appointment will be at the level of Associate Professor or Professor based on the candidate's qualifications. Applicants should write **Kenneth Brummel-Smith, M.D., P.O. Box 1034, Attn: 05D2, Portland, OR 97207.** Applicants may be subject to drug testing. *The Veterans Affairs Medical Center is an Equal Opportunity Employer.*

## National Institutes of Health National Institute on Aging Postdoctoral Fellowship Positions

The Laboratory of Biological Chemistry located at the Gerontology Research Center in Baltimore, Maryland is seeking a postdoctoral fellow (Ph.D. or M.D.) interested in studying the regulation of chondrocyte gene expression using model systems related to chondrogenesis and cartilage repair. The project will focus on the characterization of chondrocyte nuclear factors that interact with previously identified regulatory sequences in the collagen II gene. The candidate should have training in cellular and molecular biology and have an interest in degenerative diseases of aging. Starting salary will be commensurate with qualifications and experience. For more information contact Dr. Walter E. Horton, Jr. at (410) 558-8154. Interested candidates should submit curriculum vitae, bibliography, reprints, summary of research interests and names of three references to: National Institute on Aging, Attn: Walter E. Horton, Jr., Gerontology Research Center, 4940 Eastern Avenue, Baltimore, MD 21224.

NIH is an Equal Opportunity Employer.

### VICE PRESIDENT FOR ACADEMIC AFFAIRS

The University of Texas M. D. Anderson Cancer Center  
Houston, Texas

#### PRIMARY RESPONSIBILITIES:

- Serves as the Chief Academic Officer of the institution — reports to the President of the institution.
- Oversees faculty career development — responsible for development and implementation of policies relating to faculty recruitment, retention, promotion, and tenure; liaison to Faculty Senate.
- Leads educational programs — leads, coordinates, and implements all educational activities including pre- and post-doctoral studies, clinical fellowships and residencies, allied health training, inter institutional affiliations, and cancer information dissemination.
- Directs academic support services — including Medical Research Library and Offices of Conference Services, Scientific Publications, and Biomedical Communications.

#### QUALIFICATIONS:

- Ability to develop and implement an academic vision for the institution in this time of health care uncertainty.
- A strong academic background with a degree in medicine or academic doctorate in one of the biomedical sciences.
- A record of leadership in academic administration.
- Demonstrated excellence in teaching, scholarship, and public service.
- Ability to build a consensus and work with all groups within the institution to enhance academic excellence.
- Exceptional oral, written, analytical, and interpersonal skills.
- A commitment to the vision and mission of M. D. Anderson Cancer Center.

**APPLICATIONS:** Applicants should forward a letter of application, a current curriculum vitae and the names of three references by January 15, 1995 to:

Margaret L. Kripke, Ph.D., Chair  
Search Committee for Vice President for Academic Affairs  
U.T. M. D. Anderson Cancer Center  
Department of Immunology — Box 178  
1515 Holcombe Blvd.  
Houston, TX 77030

**SALARY:** Commensurate with qualifications and experience.

*An equal opportunity/affirmative action employer. Smoke-free environment.*

THE UNIVERSITY OF TEXAS  
M.D. ANDERSON  
CANCER CENTER

## DIRECTOR, STATEWIDE AIR POLLUTION RESEARCH CENTER

University of California, Riverside

Applications and nominations are invited for the position of Director of the Statewide Air Pollution Research Center (SAPRC) of the University of California, Riverside. The SAPRC is an Organized Research Unit within the University of California system, with responsibilities for research, and through appointments with academic departments, teaching at the undergraduate and graduate level. SAPRC's research mission has historically focussed upon atmospheric processes, including the chemical processes involved in the formation of air pollution and subsequent reactions in air, plants, and other life forms.

Candidates should have a record of outstanding, internationally recognized research productivity in the general area of atmospheric processes and air pollution in the atmosphere, viewed in the broadest sense. Thus, we will also consider individuals with environmentally-related research accomplishments (e.g. research programs dealing with biogenic or anthropogenic chemical emissions, physical and chemical removal and transformation processes, and effects of chemicals and particles emitted or formed in the atmosphere on human health, vegetation, soil and water systems, and visibility).

It is expected that the successful candidate will hold a Ph.D. in Chemistry, Engineering, Physics, or a closely related field and have a research emphasis in the study of atmospheric processes. He or she will be expected to maintain an active and highly visible research program while providing leadership as Director of SAPRC. In keeping with the policy of integrating SAPRC research programs with the academic research and instruction activities of the campus, the Director also will hold a 50% tenured appointment at the Professor level in an appropriate academic department, where he or she will participate in the undergraduate and graduate instructional programs. A commitment to excellence in both teaching and research and a vision of the interconnections between SAPRC and academic programs in Chemistry, Environmental Science, Environmental Toxicology, and Environmental Engineering are especially important.

Evaluations of applications will begin January 15, 1995, but applications and nominations will be accepted until the position is filled. Applicants should send a complete resume and a statement of research interests, in addition to the names of five individuals who may be contacted for letters of reference to:



SAPRC Search Committee Chair  
Office of the  
Executive Vice Chancellor  
University of California, Riverside  
Riverside, CA 92521-0403

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



## POSITIONS OPEN

### UNIVERSITY OF OKLAHOMA

#### Grayce B. Kerr Endowed Chair in Biochemistry

The Department of Chemistry and Biochemistry, The University of Oklahoma (OU), Norman Campus, is seeking an outstanding individual to occupy the **GRAYCE B. KERR ENDOWED CHAIR** in Biochemistry. Candidates must have an active, funded research program in any area of biochemistry, a strong record of research accomplishments, and a demonstrated commitment to undergraduate and graduate education. The successful candidate must qualify for a tenured professor appointment in the department. The Kerr Chair will occupy ample newly renovated research space and will have continuing discretionary research support funds. A competitive salary, fringe benefits, and start-up package will be offered. Applicants should submit a complete curriculum vitae including salary history, a summary of teaching experience, a description of current research activities with plans for future work, and the names, addresses, telephone and fax numbers of three individuals who are willing to supply letters of reference. Review of applications will begin 15 January 1995 and continue until an appointment is made. Application materials should be sent to: **Dr. David A. Young, Dean and Chair, Grayce B. Kerr Endowed Chair Search Committee, College of Arts and Sciences, University of Oklahoma, 601 Elm, Room 1100, Norman, OK 73019-0315.** The University of Oklahoma is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply. OU has a policy of being responsive to the needs of dual career couples.

### EMORY UNIVERSITY

#### Dean of the Graduate School of Arts and Sciences

Emory University invites applications and nominations for the position of **DEAN** of the Graduate School of Arts and Sciences. Emory University currently enrolls approximately 10,000 students in nine schools, taught by 1,700 full-time instructional faculty, of whom 700 are graduate faculty. The Graduate School of Arts and Sciences enrolls 1,300 students and awards Master's and doctoral degrees in 23 departments and divisions. The Dean is responsible for providing academic leadership in all aspects of the graduate program and representing graduate studies within the administration of the University.

Candidates must have a record of teaching and scholarship commensurate with appointment to the rank of professor. Evidence of administrative interest and aptitude is required, as is commitment to rigorous graduate education.

Applicants should submit a letter detailing their interest and pertinent experience, together with a current curriculum vitae. Applications and letters of nominations should be sent to: **Professor Thomas S. Burns, Chair, Graduate Dean Search Committee, Department of History, Bowden Hall, Emory University, Atlanta, GA 30322.** The search committee will begin reviewing dossiers December 15, 1994.

Emory is an Affirmative Action/Equal Opportunity Employer.

### CHAIR

#### Department of Genetics and Developmental Biology University of Connecticut Health Center School of Medicine

Applications are requested for the **CHAIR** of a newly created basic science department. The ideal candidate will be actively engaged in a research program in genetics or developmental genetics, and have the academic background required to ensure vigorous growth of a well-supported department. It is intended that the department should have a significant focus in mammalian genetics. Application should include complete curriculum vitae and should be submitted by March 1, 1995, to: **Ms. Deborah Woodbury, Department of Physiology, University of Connecticut Health Center, Farmington, CT 06030.**

An Affirmative Action/Equal Opportunity Employer. Minorities/Female/Disabled/Veterans.

**MANSFIELD UNIVERSITY** seeks to fill a full-time, **TENURE-TRACK POSITION** in Biology (Anatomy and Physiology). Dedication to teaching of paramount importance. To apply submit a letter of intent, résumé, transcripts and three current letters of recommendation postmarked by March 1, 1995, to: **Position F-223, G-1 Alumni Hall, Mansfield University, Mansfield, PA 16933.** An Affirmative Action Employer who encourages the applications of women, minorities, physically and mentally challenged.

## POSITIONS OPEN

### ENDOWED EMINENT SCHOLAR Faculty Position in Atmospheric Sciences Georgia Tech in Atlanta

The Georgia Institute of Technology invites applications and nominations for an endowed, **TENURE-TRACK FACULTY POSITION** in Atmospheric Sciences. The position is accompanied by a \$1.5 million endowment, funded in part by the Georgia Research Alliance, and appointment as **FULL PROFESSOR** in the School of Earth and Atmospheric Sciences at Georgia Tech. In addition to his or her academic duties, the Scholar will play a leadership role in linking environmental research to regional policy-making and economic development.

The successful candidate will have a record of scientific excellence, creativity, and leadership commensurate with an academic appointment at the highest level. Internationally recognized scientists specializing in any area of the atmospheric sciences are invited to apply, especially those individuals with demonstrated ability to interact between the environmental policy-making community and the scientific community.

Applications and inquiries should be forwarded to: **Dr. William L. Chameides, Chair, Eminent Scholar Search Committee, School of Earth and Atmospheric Sciences, Georgia Institute of Technology, Atlanta, GA 30332-0340.** Email: [wcham@eas.gatech.edu](mailto:wcham@eas.gatech.edu). Telephone: 404-894-1749; FAX: 404-894-1106. The Search Committee will begin screening and interviewing candidates on January 15, 1995, and continue until the Scholar is identified. The Georgia Institute of Technology is an Equal Opportunity/Affirmative Action Employer and a Unit of the University System of Georgia.

**MOLECULAR BIOLOGIST:** Ohio Wesleyan University, a selective private college of 1,800 students, announces a **TENURE-TRACK POSITION** in Molecular Biology beginning August 1995. Ph.D. required, eukaryotic molecular biologist preferred with proficiency in a variety of modern laboratory techniques, and commitment to quality teaching of undergraduates at introductory and advanced levels. Supervision of undergraduate research projects is expected. Facilities include new SEM, PCR thermal cycler, BRL vertical PAGE apparatus and power supply, ultracentrifuge, nature preserves, etc.

Send letter of application, curriculum vitae, undergraduate and graduate transcripts, and three letters of recommendation by January 3, 1995, to: **Dr. Dennis Radabaugh, Department of Zoology, Ohio Wesleyan University, Delaware, OH 43015.** For further information, write to same address or Email: [dcradaba@cc.owu.edu](mailto:dcradaba@cc.owu.edu).

Ohio Wesleyan University is an Affirmative Action/Equal Opportunity Employer. Women and minorities strongly encouraged to apply.

**UNIVERSITY OF CALIFORNIA AT BERKELEY:** The Department of Psychology will be recruiting for five (5) positions over the next two years. During 1994-95, we are recruiting for (1) a senior level position in Cognitive Psychology and (2) a position in the Biological/Neuroscience area, broadly defined. Both appointments will be effective July 1, 1995. For the latter position, all levels of appointment will be considered and our interests include, but are not limited to, behavioral neuroscience, cognitive neuroscience, behavior genetics, and neurophysiology. Skills and interests in teaching methodology and quantitative courses would be an asset for both positions. The specific areas and levels for the other three positions are yet to be determined. Applications for the stated positions must be postmarked by February 15, 1995, and are to include a curriculum vitae, selected reprints, and three letters of recommendation, sent to: **Search Committee, Department of Psychology, 3210 Tolman Hall, University of California, Berkeley, CA 94720-1650.** Candidates should specify whether they wish to be considered for the Cognitive, Biological/Neuroscience, or both positions. The University of California is an Equal Opportunity/Affirmative Action Employer.

**HUMAN HEALTH AND ENVIRONMENTAL POLICY.** The School of Public Affairs at the University of Maryland, College Park (UMCP) seeks applicants for a tenure/**TENURE-TRACK POSITION** at the intersection of human health, environment, and U.S. public policy broadly defined. A Ph.D./J.D./M.D., or equivalent and demonstrated interest and ability in analyzing public policy, required. For guaranteed consideration, résumés should be received by January 22, 1995, by: **Peter G. Brown, Environmental Programs, School of Public Affairs, UMCP, MD 20742.** Applications from women and minority candidates are especially encouraged.

## POSITIONS OPEN



### FACULTY POSITION UNIVERSITY OF MIAMI SCHOOL OF MEDICINE

The Department of Microbiology and Immunology has tenure-track faculty positions at the **ASSISTANT PROFESSOR** and/or **ASSOCIATE PROFESSOR** level open for two Molecular Immunologists with research interests in Transcription Regulation or Apoptosis as related to the immune system. The specific area of investigation is open. The chief criteria for a candidate is proven excellence in research and the potential to develop an externally funded research program. Quality research facilities, generous start-up fund, and salary will be made available to the successful candidates. Interested individuals are invited to write a letter of intent and enclose a curriculum vitae, list of publications, description of future research plans, and names of three references to: **Chairman, Search Committee, Department of Microbiology and Immunology, University of Miami School of Medicine, P.O. Box 016960 (R-138), Miami, FL 33101.** The University of Miami is an Equal Opportunity/Affirmative Action Employer.

### MEDICAL ONCOLOGY

Geisinger Medical Center/Weis Center for Research is seeking a recently trained **PHYSICIAN** to practice medical oncology and do bench research in molecular genetics. This position is 50% clinical medicine and 50% research. Research time is protected and funded by an endowment. Research funds include budgeted monies for supplies and technical support. Additional support could be obtained by application for internal grants. The Weis Research Center has well established research in signal transduction, cell cycle regulation and cell expression and function of oncogenes. Successful candidates will be Board-certified/Board-eligible in Medical Oncology. Geisinger Medical Center, located in Danville, Pennsylvania, is a 577-bed tertiary care institution providing care for 1.6 million throughout eastern and central Pennsylvania. You can enjoy the advantages of living in a small town with low crime, good schools, and reasonable housing costs while still practicing medicine and developing a research laboratory in a large urban-style academic medical center. Please send your curriculum vitae along with all inquiries to: **Geisinger, Albert M. Bernath, M.D., Medical Oncology MO-CS, 100 North Academy Avenue, Danville, PA 17822-2001,** or you may fax your curriculum vitae to 717-271-6988. An Equal Opportunity Employer/Minorities/Female/Disabled/Veterans.

### FACULTY POSITION IN PHARMACOLOGY

The Department of Pharmacology is reopening its search to fill a full-time, **TENURE-TRACK** faculty position. Applicants are sought with active research programs in any aspect of pharmacology or related disciplines and should have a demonstrated record of successful publication and extramural funding. In addition to maintaining a vigorous research program, particular attention will be given to the candidacy of individuals who have interest and enthusiasm for teaching medical and graduate pharmacology. Salary and position will be based upon individual qualifications and experience. Candidates should send a curriculum vitae, a brief statement of research interests and accomplishments, a record of grant funds, and a list of at least three references. Applications should be sent to: **Professor Lynn C. Yeoman, Chairman, Faculty Search Committee, Department of Pharmacology, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030-3498.** Baylor College of Medicine is an Equal Opportunity/Affirmative Action Employer.

Applications are invited for two Breast Cancer **FACULTY POSITIONS** with emphasis on translational research: One Ph.D. with molecular biology experience and one M.D. with clinical/laboratory interests, including cancer prevention.

Applicants should submit a curriculum vitae and statement of research interests to: **Dr. Hyman Muss, Comprehensive Cancer Center Wake Forest University, Winston-Salem, NC 27157.**

## Postdoctoral Positions in *BRCA1* Research

For more than 115 years, scientists at Eli Lilly and Company have been developing novel, high quality pharmaceutical products. With a current yearly investment of over \$900 million in R&D programs, our continued success in reducing the time required to get new drug candidates to market requires the finest scientific talent available.

The Cancer Research Division at Eli Lilly and Company seeks outstanding and motivated individuals for postdoctoral positions within its breast cancer research group. The individuals we seek will be involved in projects focused on biological characterization of the newly-identified *BRCA1* gene product (Science 266:66, 1994). Qualified candidates should have proven experience in either molecular biology, cancer or developmental biology. Individuals having considerable expertise with the yeast two-hybrid system, expression cloning, and/or transcription factors are strongly encouraged to apply.

The Cancer Research Division is comprised of a group of highly interactive scientists. Successful candidates will complement ongoing research activities and will have opportunities to collaborate with different laboratories. Postdoctoral fellows are strongly encouraged to publish and to present their findings at national scientific meetings.

Qualified applicants should submit a letter of application along with their curriculum vitae, official transcripts and three letters of reference to: Albert L. Peyton, Ph.D., Corporate Recruitment SC/1125, Eli Lilly and Company, Lilly Corporate Center, Indianapolis, IN 46285.

Eli Lilly and Company is an equal opportunity employer committed to diversity in the workplace.



## Director of Drug Safety Research Upjohn Laboratories Japan

The Upjohn Company, a multinational, research-based pharmaceutical company, is seeking a Director to lead the pathology, toxicology, safety, pharmacology and research animal support functions. This opportunity is in our modern, well-equipped, preclinical and pharmaceutical development laboratory located in a research park and university community in Tsukuba, Japan.

Qualifications include advanced biomedical training (DVM, PhD or equivalent), documented expertise in toxicology and/or pathology, experience in preclinical safety testing and registration of pharmaceutical compounds, and management skills. Fluency in Japanese and English is highly desirable.

Upjohn offers a competitive compensation and benefits package commensurate with the responsibilities of the position and the qualifications of the incumbent. For confidential consideration please send your curriculum vitae to: **The Upjohn Company, Corporate Recruiting, Ad #237, 7000 Portage Road, Kalamazoo, Michigan 49001.** We are an Equal Opportunity Employer with a commitment to workplace diversity.



Advancing Science...  
Enhancing Life

# ST. JOHN'S UNIVERSITY

NEW YORK

## COLLEGE OF PHARMACY AND ALLIED HEALTH PROFESSIONS

St. John's University invites applications and nominations for the position of Dean of the College of Pharmacy and Allied Health Professions. The Dean reports directly to the Provost, serving as the chief academic and budgetary officer of the College with responsibility for all of its academic programs.

St. John's University founded in 1870 by the Vincentian Community, is a Doctoral I University comprised of 8 schools and colleges. With more than 18,000 students, St. John's University is the largest Catholic University in the nation, offering more than 100 undergraduate and graduate majors. The University is located in a pleasant residential section of Queens, New York, approximately 10 miles from midtown Manhattan. The University is committed to academic excellence in teaching and scholarly research and to a core curriculum in the liberal arts and sciences.

At the baccalaureate level, the College of Pharmacy and Allied Health Professions seeks to prepare students to meet the present and future demands for pharmacists, physician assistants, medical technologists, toxicologists, and pathologist assistants. At the graduate level, the M.S., Ph.D. and two-year post baccalaureate Pharm.D. degrees are offered. The College currently has 43 full-time faculty, 25 adjunct faculty and utilizes the support of more than 300 pharmacy preceptors and affiliate allied health faculty practicing in approximately 125 affiliated clinical training sites located in New York, New Jersey and Connecticut. The College has a strong basic science program supported by extramural funding.

The individual for this position will provide the leadership and vision necessary to support, expand and advance the College's educational, clinical and research programs within the context of the University's mission.

### The successful candidate should possess the following qualities:

- the capacity to provide leadership in a competitive metropolitan learning environment
- an ability to integrate a dynamic and creative basic science and pharmacy practice faculty
- the desire to motivate, support and encourage faculty in the areas of scholarly achievement, research, development of innovative teaching methodologies, and strategic planning
- a commitment to academic excellence through a process of ongoing needs assessment
- a willingness to participate in and support the capital development of the University
- a sensitivity to the multicultural diversity of the University community
- a willingness to represent the College in professional activities

### Candidates should possess the following credentials:

- the first professional degree in pharmacy and professional experience outside the academic setting
- an earned doctorate with a distinguished record of teaching, research and service/qualifications consistent with the requirements for the rank of full professor
- established excellence in interpersonal and administrative skills
- participation and achievement in professional organizations and grantsmanship

Applications should include a brief statement of interest; a curriculum vitae; the names, titles, addresses and telephone numbers of 3 to 5 references.

Screening of applications will begin January 3, 1995, with the anticipation of a July 1, 1995, appointment.

The position has a salary range commensurate with qualifications and experience. Send application or nomination to:

Dr. Willard P. Gingerich, Dean

Graduate School of Arts and Sciences • Chair, Search Committee

St. John's University • 8000 Utopia Parkway • Jamaica, New York 11439

St. John's University is an Equal Opportunity/Affirmative Action Employer.



## POSITIONS OPEN



### ACADEMIC UROLOGIST M.D./Ph.D.

**FACULTY POSITION** requires a candidate who has fellowship training in oncology and Ph.D. in molecular biology with clinical and research interest in prostate cancer. Please send inquiries to: **Jay Y. Gillenwater, M.D., Department of Urology, Box 422, University of Virginia Health Sciences Center, Charlottesville, VA 22908.** *The University of Virginia is an Equal Opportunity/Affirmative Action Employer.*

**ASSISTANT RESEARCH SCIENTIST**, Department of Laboratory Medicine, University of California, San Francisco (UCSF). Position available to study Molecular Cytogenetics of Human Astrocytomas. Experiments will utilize human tumor tissue and cell lines. Expertise in comparative genomic hybridization, fluorescence *in situ* hybridization and physical mapping is necessary. Formal training in human genetics, and background in molecular biology, cytogenetics, flow and image cytometry required. Excellent communications skills for directing and interacting with a multidisciplinary group of physicians, scientists, and students preferred. Salary range \$41,600-\$43,100 per year. Please send curriculum vitae, a brief statement of research interests and the names of references to: **Dr. Dan Pinkel, Search Committee Chairman, Department of Laboratory Medicine, UCSF, San Francisco, CA 94143-0808.** *The University of California, San Francisco is an Equal Opportunity/Affirmative Action Employer.*

### POSTDOCTORAL AND PREDOCTORAL POSITIONS

**Sloan Center for Theoretical Neurobiology, University of California, San Francisco (UCSF)**

The newly formed Sloan Center for Theoretical Neurobiology at UCSF solicits applications for pre- and postdoctoral fellowships, with the goal of bringing theoretical approaches to bear on neuroscience. Applicants should have a strong background and education in a theoretical discipline, such as physics, mathematics, or computer science, and commitment to a future research career in neuroscience. Prior biological or neuroscience training is not required. The Sloan Center will offer opportunities to combine theoretical and experimental approaches to understanding the operation of the intact brain. The research undertaken by the trainees may be theoretical, experimental, or a combination.

The resident faculty of the Sloan Center are **Allison Doupe, Stephen Lisberger, Michael Merzenich, Kenneth Miller, Roger Nicoll, Christoph Schreiner, and Michael Stryker.** All have research programs in systems and integrative neuroscience. In addition, there will be a series of visiting faculty. These will include **Lawrence Abbott, Brandeis University; William Bialek, NEC Research Institute; Sebastian Seung, ATT Bell Labs; David Sparks, University of Pennsylvania;** and others to be named.

To apply, please send a curriculum vitae, a statement of previous research and research goals, up to three relevant publications, and have two letters of recommendation sent to us. Send applications to:

**Steve Lisberger  
Sloan Center for Theoretical Neurobiology at UCSF  
Department of Physiology  
University of California  
513 Parnassus Avenue  
San Francisco, CA 94143-0444**

*UCSF is an Equal Opportunity/Affirmative Action Employer.*

### THE NEUROSCIENCES INSTITUTE LA JOLLA Behavior and Neural Development

Applications are invited for the **POSTDOCTORAL POSITION** of Junior Fellow in Experimental Neurobiology to study the neural correlates of species behavioral differences in birds. Applicants with a background in any area of developmental or experimental neurobiology will be considered. Fellows will receive stipends appropriate to their qualifications and experience. Submit a curriculum vitae, statement of research interests, and names of three references to: **Dr. Evan Balaban, The Neurosciences Institute, 3377 North Torrey Pines Court, La Jolla, CA 92037.** FAX: 619-554-9159; Email: balaban@nsi.edu.

## POSITIONS OPEN

### POSTDOCTORAL RESEARCH ASSOCIATE FISHERIES OCEANOGRAPHY

The Pelagic Fisheries Research Program (PFRP), a component of the Joint Institute of Marine and Atmospheric Research (JIMAR) jointly sponsored by the University of Hawaii and the National Oceanic and Atmospheric Administration (NOAA), pursues multidisciplinary research on fisheries for tunas, billfish and related species in support of management of these fisheries by the Western Pacific Regional Fishery Management Council in Hawaii, American Samoa, Guam and the Commonwealth of the Northern Mariana Islands.

Applications are invited for a **VISITING POSTDOCTORAL FELLOWSHIP** in fisheries oceanography. The successful candidate will be expected to work closely with other specialists within the PFRP. The general area of interest is the relationship between oceanographic processes and fisheries for tropical tunas and billfish. Some specific areas of interest are the effect of large scale oceanographic features on interannual variability in fisheries and theoretical studies of tuna schooling behavior. Other areas of interest are use of genetic data to infer within-generation exchange rates between population centers and development of remotely interrogated archival tags.

Appointment is for one year with the possibility of extension dependent on performance and availability of funds. Position will be filled when a suitable applicant is found.

Applicants must possess a Ph.D. in an appropriate field with some experience in one of the above areas of research.

To apply, submit résumé, copies of pertinent publications, and a one page outline of proposed research to: **Dr. John Sibert, Pelagic Fisheries Research Program, Joint Institute of Marine and Atmospheric Research, 1000 Pope Road, University of Hawaii at Manoa, Honolulu, HI 96822.**

Two **POSTDOCTORAL POSITIONS** at the University of New Mexico to (1) implement/validate spatially explicit energy/water balance models at multiple temporal scales for the 100,000 ha Sevilleta LTER site, and 2) implement spatially explicit ecosystem process models of production and decomposition. Requirements include: Ph.D. in Biology or Earth Sciences, or related field; publication record; modeling; and GIS, database, UNIX, C and/or Fortran programming experience. TDR experience desired. A curriculum vitae, reference to Requisition No. 941964-A and the names of three references must be received by 16 December 1994 by the **Human Resources Department, University of New Mexico, 1717 Roma NE, Albuquerque, NM 87131.** Start: 15 January 1995. Salary: \$30,000 per year. *University of New Mexico is an Affirmative Action/Equal Opportunity Employer/Educator.*

### PHARMACOLOGY OF NEUROPEPTIDE Y

**POSTDOCTORAL POSITION** available to study the functional significance of Neuropeptide Y (NPY) and its receptors in brain and the periphery using novel peptidomimetics. Experience in measuring arterial vasoconstriction *in vitro*, blood pressure in conscious rats and endogenous neurotransmitter release from brain tissue *in vitro* desirable. Send curriculum vitae and names of three references to: **Dr. Richard E. Tessel, Department of Pharmacology and Toxicology, The University of Kansas, Lawrence, KS 66045-2505.** Closing date: Until a suitable candidate is found.

*Equal Employment Opportunity/Affirmative Action Employer.*

### POSTDOCTORAL POSITIONS

Available immediately to study pulmonary oxidative injury. The focus of this project is to determine the role of antioxidants in protection and repair from oxidative injury in the neonatal lung. Experience in antioxidants, oxidant injury and/or developmental biology preferred. Please send or FAX curriculum vitae, brief description of research experience and the names of three references to: **Lou Ann S. Brown, Ph.D., Department of Pediatrics, Emory University School of Medicine, 2040 Ridgewood Drive, N.E., Atlanta, GA 30322.** FAX: 404-727-3236; Telephone: 404-727-5739. *An Equal Opportunity Employer.*

**POSTDOCTORAL POSITIONS** available in the areas of molecular biology and genetics. Applicants should send curriculum vitae, references and a brief description of research interests to: **The Postdoctoral Program, Department of Molecular Biology, Princeton University, Lewis Thomas Laboratory, Princeton, NJ 08544.** *Princeton University is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN



**USDA, Agricultural Research Service**, in Beltsville, Maryland is seeking a **POSTDOCTORAL RESEARCH ASSOCIATE** for two years to study molecular biology/biochemistry of protozoan parasites of domestic animals with the goal of identifying novel targets for coccidiosis. Applicants must have a Ph.D. in molecular biology, biochemistry, or microbiology and experience in DNA sequencing and RT-PCR. Expertise in heterologous gene expression in *E. coli* and yeast is desired. Salary is commensurate with experience. To apply, send a current résumé, names of three references (including previous employers), and transcripts to: **Dr. Mark Jenkins, Parasite Immunobiology Laboratory, ARS, USDA, Building 1040, BARC-EAST, Beltsville, MD 20705** by December 23, 1994. *An Equal Opportunity Employer.*

### POSTDOCTORAL POSITION SPIROCHETE GENETICS

Health Research, Inc., seeks a **POSTDOCTORAL POSITION** to work within the New York State Department of Health, Axelrod Institute to study the molecular aspects of spirochete motility and pathogenesis. The NIH-funded project is focused on the identification and characterization of motility genes of *Treponema phagedenis* and *Treponema pallidum*, though other areas of interest in spirochete genetics or pathogenesis are available for research as well. Our recent work involved the characterization of the unusual flagellar hook of these unique organisms. The lab is fully equipped and is supported with extensive core facilities in Genetics, Immunology, Biochemistry, and Computer Services. Doctorate or equivalent degree required. Experience in molecular biological techniques would be highly beneficial. Candidates should send a curriculum vitae, statement of research interests and career goals, and names of three references to: **Ronald J. Limberger, Ph.D., W165, Axelrod Institute, NYS Department of Health, P.O. Box 22002, Albany, NY 12201-2002,** or Email: [Ron.Limberger@wadsworth.org](mailto:Ron.Limberger@wadsworth.org).

### POSTDOCTORAL POSITION

**BIODIVERSITY/ENVIRONMENTAL CHANGE.** A 12-month position available immediately for a recent Ph.D. to conduct experimental studies of the functional significance of biodiversity in changing environments. We seek an individual interested in using aquatic protists in laboratory microcosms to explore population, community, and ecosystem processes. Previous experience with protists is desirable, but not necessary. All requirements for the Ph.D. must be completed at the time of appointment. Send curriculum vitae, statement of research interests, and names of three references to: **Dr. Peter Morin, Department of Biological Sciences, Nelson Laboratories, Rutgers, The State University of New Jersey, Piscataway, NJ 08855-1059.** *Rutgers is an Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION** in Molecular Genetics of Hypertension. Available for the identification of genes controlling blood pressure in genetically hypertensive rats. Techniques include library construction and screening, cloning, RFLP analysis, PCR, DNA sequencing, linkage analysis, positional cloning and construction of congenic strains. Applicants must have a Ph.D. Experience in molecular biology and/or genetics is desirable. Send curriculum vitae to: **Dr. John Rapp, Chairman, Department of Physiology and Molecular Medicine, Medical College of Ohio, P.O. Box 10008, Toledo, OH 43699.** *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION** to study the molecular mechanisms involved in epidermal growth factor receptor-mediated stimulation of cardiac adenylyl cyclase. Approaches include reconstitution of wild type and mutated signaling elements in cells and *in vitro*. Applicants must have a Ph.D. in Biochemistry, Pharmacology or related discipline. Prior experience in the area of signal transduction is desirable. Please send curriculum vitae and names of three references to: **Dr. Tarun B. Patel, Department of Pharmacology, University of Tennessee, Memphis, 874 Union Avenue, Memphis, TN 38163.** Telephone: 901-448-6006. *An Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### POSTDOCTORAL POSITION

**POSTDOCTORAL POSITION** available immediately to delve into the genetic etiology of Alzheimer's Disease (AD) and other neurogenetic disorders. This position is a part of a large interactive group that has been in the forefront of unravelling the genetic epidemiology of AD. The present projects include genetic linkage studies to elucidate additional AD genes, examination of interaction between known AD loci, and developing new methods of screening for disease genes in complex disorders.

**Prerequisites:** Ph.D. in genetics or biostatistics with a strong background in the other.

**Contact:**

**Dr. Margaret A. Pericak-Vance**  
Division of Neurology  
Duke University Medical Center  
Box 2900  
Durham, NC 27710  
919-684-6274

## POSITIONS OPEN

### POSTDOCTORAL FELLOWSHIP CEREBRAL MICROVASCULAR DISEASE/BLOOD-BRAIN BARRIER

UCLA Brain Research Institute and Neuropathology. NRSA Institutional Training Program supports **POSTDOCTORAL RESEARCH FELLOWSHIP** (one year, renewable for a second) focused on cerebral microvascular disease, including age-related changes, vascular dementia, blood-brain barrier. Background in morphologic techniques, immunohistochemistry, and molecular biology preferred. Competitive salary commensurate with postdoctoral experience. Applicants must be U.S. citizens or permanent residents with M.D. and/or Ph.D. Position available late 1994/early 1995. Send curriculum vitae, representative publications and names of referees to: **Dr. Harry V. Vinters, Department of Pathology, UCLA Medical Center, CHS 18-170, Los Angeles, CA 90024-1732.** *An Equal Opportunity Employer.*

### POSTDOCTORAL POSITIONS IN MOLECULAR AND CELLULAR BIOLOGY

To study the bombesin-like peptides (BLP). Projects include 1) Cloning of new bombesin-like peptides and their receptors; 2) Characterization of the role of BLP in early lung development; 3) Characterization of the role of BLP in fertilization and the acrosome reaction. Methods include PCR cloning, expression cloning, protein purification, *in vivo* fetal monkey models and single cell imaging. Applicants should have a background in molecular biology, neurobiology, lung development or signal transduction mechanisms in sperm. Send curriculum vitae and names of three references to: **Eliot Spindel, M.D., Ph.D., Division of Neuroscience, Oregon Regional Primate Research Center, 505 NW 185th Avenue, Beaverton, OR 97006.** *An Equal Opportunity Employer.*

**POSTDOCTORAL POSITION** available immediately for NIH-supported study on structure and function of the secreted *Toxoplasma gondii* nucleoside triphosphate hydrolase, using recently developed molecular techniques. Practical experience in molecular biology required. Send curriculum vitae and addresses of three references to: **Dr. Keith Joiner, Chief, Section of Infectious Diseases, LCI 808, 333 Cedar Street, P.O. Box 208022, Yale University School of Medicine, New Haven, CT 06520-8022.** Telephone: 203-785-4140; FAX: 203-785-3864. *Yale University is an Equal Opportunity Employer. Women and minorities are encouraged to apply.*

**POSTDOCTORAL POSITION** available immediately to study gene expression from recombinant La Crosse-Sindbis viruses utilizing molecular biological and virological techniques. Strong experience in biochemistry or molecular biology or tissue culture essential. Please contact: **Dr. Raju Ramasamy, Microbiology, Meharry Medical College, Nashville, TN 37208.** Telephone: 615-327-6687; FAX: 615-327-6072. Candidates may also send their curriculum vitae and two letters of recommendation to the above address.

**POSTDOCTORAL POSITION** in molecular microbiology to examine changes in microbial diversity in soil following introduction of genetically engineered organisms. Experience in gene cloning and PCR required. Salary depends on experience. Please send curriculum vitae, reprints, and the names and addresses of three references to: **Dr. Eric W. Triplett** by mail (Agronomy Department, University of Wisconsin, Madison, WI 53706), Email: triplett@mac.wisc.edu, or FAX: 608-262-5217.

**POSTDOCTORAL POSITIONS** in Molecular and Biochemical Immunology. Study role of lymphocyte serine proteases (granzymes) in cell killing. Experience in protein purification or molecular biology desirable. One position available immediately. Send curriculum vitae, names of three references to: **Dorothy Hudig, Ph.D., Cell and Molecular Biology Program, MS 320, University of Nevada, Reno, NV 89557.** *Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL POSITION** available to work on mechanisms of chromosome synapsis and segregation during meiosis in yeast. Experience in genetics and molecular biology required. Send curriculum vitae and the names of three references to: **Nancy Hollingsworth, Department of Biochemistry/Cell Biology, SUNY Stony Brook, Stony Brook, NY 11794-5215.** *SUNY Stony Brook is an Affirmative Action/Equal Opportunity Educator and Employer.*

## Research Scientist

### Stanford University Biochemistry

The Department of Biochemistry is seeking four Research Scientists and/or Postdoctoral Fellows to work in an exciting interdisciplinary project at the Stanford Center for DNA Sequence and Technology. The immediate goals are to improve DNA sequencing, and to participate in the development of new technologies and instrumentation for large scale automated DNA sequencing. Included in these technologies is a collaboration with Affymetrix for the analysis of sequence by hybridization to an array of synthesized oligonucleotides (DNA chip). These technologies will also be applied to whole genome analysis to investigate many aspects of biological function. The Center consists of an interdisciplinary team of 25 scientists and engineers committed to improving efficiency of sequencing, sequence analysis and new applications using whole genome sequences.

**Qualifications include:** Ph.D. or postdoctoral training in Biochemistry, Chemistry, Chemical Engineering, Physics, Electrical and Mechanical Engineering, Mathematics or Computer Science.

The candidate should have some knowledge of fundamental molecular biology, and good computer skills. Must possess a wide range of scientific and technical interests, the ability to solve scientific and technical problems, and a desire to apply them to fundamental biological problems related to human health. Must work effectively as a group member and enjoy interaction with a diverse group of dedicated scientists and engineers. Must comply with government regulations and university policies and procedures regarding health and safety procedures.

Send curriculum vitae and references to **Ronald W. Davis, Ph.D., Stanford Center for DNA Sequence and Technology, Department of Biochemistry, 855 California Avenue, Rm. 173, Palo Alto, CA 94304.**

### Coordinator of Undergraduate Studies in Zoology

Tenure-track Assistant or Associate Professor position open Fall 1995 for a Coordinator of Undergraduate Studies to teach the Introductory Zoology course and supervise academic advising of undergraduates. Introductory Zoology is a large lecture course for majors and non-majors. Teaching will generally be one course a semester, and opportunities to teach in the candidate's specialty will be provided. A research program is also expected. Preference given to applicants whose training and interests support the undergraduate curriculum in cell and developmental biology, genetics, physiology, or anatomy.

### Aquatic Ecologist

Tenure-track Assistant Professor position open Fall 1995 for an aquatic ecologist, working on biological aspects of freshwater systems. Successful candidate will strengthen our graduate program in ecology, evolution, systematics, and animal behavior and should complement faculty interests in these areas. Access to facilities at the OU Biological Station on Lake Texoma will also be provided. The primary teaching responsibility will generally be one course a semester to include limnology, general ecology, and graduate courses in the candidate's specialty. A course at the introductory level may be an occasional responsibility.

Candidates must have PhD with proven record of excellent teaching and research abilities (demonstrated by publications). Postdoctoral experience preferred. Screening begins 15 January 1995 and will continue until positions are filled. Send vitae, four letters of recommendation, representative reprints, summary of teaching experience and description of research interests to: **Dr. James N. Thompson, Jr., Chair, Department of Zoology, University of Oklahoma, Norman, OK 73019.**

**AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER. OU HAS A POLICY OF BEING RESPONSIVE TO NEEDS OF DUAL-CAREER COUPLES.**

### POSTDOCTORAL POSITIONS

Four to five positions are available immediately to work on: 1. The photoinduced toxicity of priority pollutants, primarily PAHs, to animals, plants and microbes; and 2. UV-B impacts on plants. Both projects will be carried out at the biochemical and cellular levels. Send curriculum vitae and the names of three referees to: **Dr. Bruce Greenberg, Department of Biology, University of Waterloo, Waterloo, ON N2L 3G1 Canada.** Telephone: 519-888-4567 x3209; FAX: 519-746-0614; Email: greenber@biology.watstar.uwaterloo.ca. These appointments are for one-year terms with extensions possible based on the availability of funds.

### POSTDOCTORAL POSITIONS

#### The Interferon System; Tumor Suppressor Genes

Applicants are invited for the exploration of the mechanisms of the antiproliferative and antiviral activities of various interferon-activatable genes. Applicants should be proficient in recombinant DNA techniques.

Please send résumé and three references to: **Dr. Peter Lengyel, Department of Molecular Biophysics and Biochemistry, C-139, SHM, Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06520-8024 USA.**

### POSTDOCTORAL POSITION VERTEBRATE DEVELOPMENT

Immediate opening to explore the vertebrate alcohol/retinol dehydrogenase gene family, including studies on gene regulation, retinoic acid synthesis during embryogenesis, and the mechanism of fetal alcohol syndrome. Contact: **Dr. Gregg Duyster, La Jolla Cancer Research Foundation, 10901 North Torrey Pines Road, La Jolla, CA 92037.**

### POSTDOCTORAL POSITION MOLECULAR BIOLOGY

A **POSTDOCTORAL POSITION** is available to study the molecular biology of breast cancer. This project focuses on the function of breast cancer-related tumor suppressor genes and the effect of mutations in these genes. Experience in molecular biology required. Preference will be given to candidates with experience in expression cloning and structure-function analysis. Send curriculum vitae, description of past experience and names and addresses of three references to: **Barbara L. Weber, M.D., Departments of Medicine and Genetics, University of Pennsylvania, 1009 BRB I, 422 Curie Boulevard, Philadelphia, PA 19104.** Fax: 215-662-7617. *An Equal Opportunity/Affirmative Action Employer.*



## POSITIONS OPEN

### POSTDOCTORAL POSITION AVAILABLE Department of Microbiology and Immunology University of British Columbia

Two positions are available in a collaborative project with J. A. Hoch, Scripps Research Institute, to study the structure and function of the *Bacillus subtilis* response regulator, Spo0A. The project will undertake *in vitro* characterization of mutant forms of Spo0A. Experience with recombinant DNA techniques is essential, experience with protein purification and enzymology is desirable. In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents.

Send curriculum vitae with names of references to: G. B. Spiegelman, Department of Microbiology and Immunology, University of British Columbia, Vancouver, BC V6T 1Z3 Canada. FAX: 604-822-6041; email: spie@unixg.ubc.ca.

### TWO POSTDOCTORAL POSITIONS IN BIOMOLECULAR NMR

Two POSTDOCTORAL POSITIONS are open in the areas of multidimensional NMR and biochemical studies of DNA polymerase  $\beta$ ,  $\gamma$  resolvase and related DNA recombinases, and other nucleic acid interactive proteins. Applicants should have experience in NMR techniques and a biochemical background. Research facilities include a biochemical laboratory, an NMR laboratory equipped with new 4-channel 600 MHz and 500 MHz NMR spectrometers, and a molecular graphics/workstation laboratory. Send curriculum vitae and names of three references to: Dr. Greg Mullen, Department of Biochemistry, UCONN Health Center, Farmington, CT 06032. An Affirmative Action/Equal Opportunity Employer/Minorities/Female/People with Disabilities/Veterans.

### POSTDOCTORAL POSITIONS HUMAN GENOME RESEARCH

PH.D./M.D. POSITIONS to isolate and characterize genes associated with breast cancer, Wilms' tumor, leukemias, retinopathies, and deafness. Also, positions available in physical and transcription mapping of human chromosome 11. Experience in molecular genetic and genome technology is required. Please send curriculum vitae, a research description and future interests and names and telephone numbers of three references to: Thomas B. Shows, Ph.D., Chair, Department of Human Genetics, Roswell Park Cancer Institute, Buffalo, NY 14263. Roswell Park is a Minorities/Female/Disabled/Veterans/Affirmative Action Employer.

### POSTDOCTORAL CLINICAL RESEARCH FELLOWSHIPS

At Harvard Medical School, Consolidated Department of Psychiatry: NIMH-funded POSTDOCTORAL FELLOWSHIPS in a two-year program involving independent research under supervision of experienced clinical researchers in biological and social/developmental fields, participation in integrative seminars, and formal courses at Harvard. Research opportunities include brain imaging techniques, psychopharmacology, psychiatric epidemiology, and longitudinal studies of development. The program is now in its fifteenth year. Open to psychiatrists, residents, physicians, and Ph.D.'s in biological/social sciences who are U.S. citizens or hold a U.S. resident card. Stipends begin in July 1995. Application deadline: February 1, 1995; earlier acceptances possible. Contact: Program Administrator, Clinical Research Training Program, Harvard Medical School, Judge Baker Children's Center, 295 Longwood Avenue, Boston, MA 02115. 617-734-0031. Minority applications encouraged.

**POSTDOCTORAL FELLOWSHIP.** Available immediately for molecular biologist with recent Ph.D. to work as part of an interdisciplinary team investigating cellular transporters. Applicants should have experience in molecular expression cloning techniques; experience in biochemistry is helpful. The appointment is for two years with an opportunity for career advancement. Salary: approximately \$29,000 per year, plus fringe benefits (26%). Once appointed, opportunities exist for U.S. citizens or permanent residents to apply for the U.S. Department of Energy-sponsored Alexander Hollander fellowship (\$37,500 per year; \$40,500 per second year). Please send curriculum vitae and three letters of reference to: Professor J. R. Barrio, Department of Molecular and Medical Pharmacology, B2-086A, UCLA, Center of the Health Sciences, Los Angeles, CA 90024-6948.

## POSITIONS OPEN

### POSTDOCTORAL FELLOWSHIPS AT THE SANTA FE INSTITUTE

The Santa Fe Institute (SFI) has an opening for one or more POSTDOCTORAL FELLOWS in its Simulation, Adaptive Computation and Complex Systems Programs beginning in September 1995. These fellowships will last for one year with a possible extension to a second year.

The Simulation, Adaptive Computation, and Complex Systems Programs are interdisciplinary efforts focusing on advancing our fundamental understanding of complex adaptive systems and on computational aspects of their study. The programs include adaptive computation and artificial intelligence; the development of general-purpose simulation environments; the development of organizational modeling and analytic object libraries; and the theory of complex systems. They overlap strongly with SFI research on economics as a complex adaptive system, the physics of information, modeling the immune system, the evolution of culture, and artificial life.

Candidates should have a Ph.D. (or expect to receive one before September 1995) and should have backgrounds in computer science, mathematics, economics, theoretical physics or chemistry, game theory, cognitive science, theoretical biology, dynamical systems theory, or related fields. A strong background in computational approaches is essential, as is an interest in interdisciplinary work. Evidence of these interests, in the form of previous research experience and publications, is helpful.

Applicants should submit a curriculum vitae, list of publications, and statement of research interests, and arrange for three letters of recommendation to be sent. Incomplete applications will not be processed.

All application materials must be received by February 1, 1995. Decisions will be made by March or April 1995.

Send applications to: Postdoctoral Committee, Santa Fe Institute, 1399 Hyde Park Road, Santa Fe, NM 87501. Applications or inquiries may also be sent by electronic mail to: postdoc@santafe.edu.

SFI is an Equal Opportunity Employer

Two POSTDOCTORAL FELLOWSHIPS (Re-advertised), School of Ocean and Earth Science and Technology, University of Hawaii, extramural funds. Available immediately through September 30, 1995; renewal dependent upon continuation of funding and performance. Participate in research enhancing marine macroalgal biomass production, and biomass and/or hydrocarbon production with cyanobacteria. Ph.D. in Botany, Microbiology, or closely related discipline required. Expertise in macro- and/or microalgal physiology, algal culture systems preferred. Annual Stipend: \$33,000 to \$39,000. Inquiries: Dr. K. R. McKinley at 808-956-2346. Send statement of research interest, curriculum vitae, one relevant publication, and telephone numbers of three professional references to: Personnel Officer, Hawaii Natural Energy Institute, 2540 Dole Street, Holmes 246, Honolulu, HI 96822. Screening will begin on December 7, 1994, and continue until suitable candidates are found or positions withdrawn. Equal Employment Opportunity/Affirmative Action Employer.

### ARNOLD RESEARCH FELLOWSHIPS

The Arnold Arboretum of Harvard University announces the availability of FELLOWSHIP APPOINTMENTS and support (Putnam or Mercer Fellowships, Arnold Arboretum Associates, Deland Awards) of variable, renewable duration for specific research projects utilizing the landscapes (335 acres) or the library (260,000 volumes), herbarium (2,600,000 specimens) and living (5,000 taxa) collections of the Arnold Arboretum. The number of awards each year will depend upon the availability of funds. Applications should include a letter of introduction briefly describing the proposed project and prior contacts with Harvard staff or faculty, and a résumé listing three references. Send by 1 March 1995 to: Dr. Robert E. Cook, Director, Arnold Arboretum, 125 Arborway, Jamaica Plain, MA 02130. For information brochures, call: 617-524-1718, ext. 100.

**POSTDOCTORAL POSITION**—To participate in studies of DNA replication in yeast. The research involves the use of molecular genetics and biochemistry to study the mechanism of initiation and regulation of DNA replication in *S. cerevisiae*. Send curriculum vitae, brief description of prior research experience, and the names of several references to: Dr. S. Eisenberg, University of Connecticut Health Center, Farmington, CT 06032.

An Affirmative Action/Equal Opportunity Employer. Minorities/Female/Disabled/Veterans.

## POSITIONS OPEN

### POSTDOCTORAL FELLOW FOR ALZHEIMER'S RESEARCH PROGRAM

Department of Neurology, University of Kuopio, Kuopio, Finland, is seeking a POSTDOCTORAL FELLOW. We need an innovative scientist with skills in molecular biology, immunohistochemistry and *in situ* hybridization techniques. Experience in histology of human or nonhuman primate brain is preferred. The Neuroscience Center of 50 people in Kuopio has excellent facilities, up-to-date equipment, and 15 years of experience in Alzheimer's research. Our Alzheimer's Research Program is supported by the Academy of Finland. Salary will be according to competence. Further information: Hilkka Soininen, M.D., telephone: 358-71-162877; FAX: 358-71-162048; internet: Hilkka.Soininen@uku.fi. Send curriculum vitae, statement of your research interests, list of publications, three letters of reference, by December 15, 1994, to: Professor Paavo Riekkinen, Department of Neurology, University of Kuopio, P.O. Box 1627, 70211 Kuopio, Finland.

### UCLA GLOBAL CHANGE CONSORTIUM FELLOWSHIPS

The UCLA Consortium for Global Change and Regional Impacts has established a continuing series of doctoral fellowships awarded on a competitive basis for the period of doctoral study. Applications will be accepted from any discipline appropriate to studies of global environmental change and its regional impacts, including biological, engineering, health, physical, and social sciences. Recipients must be accepted into a UCLA doctoral degree program for the 1995-96 academic year, and will be expected to interact with an interdisciplinary group of Global Change Consortium faculty and students. Application deadline: February 15, 1995. For information contact: Jeff Saito, Institute of Geophysics and Planetary Physics, 3637 Geology Building, University of California, Los Angeles, CA 90024-1567. Email: jsaito@atmos.ucla.edu; 310-206-9386. An Equal Opportunity/Affirmative Action Employer.

### POSTDOCTORAL FELLOW RESEARCH FACULTY School of Biological Sciences University of Missouri-Kansas City

Positions are available immediately to study structural determinants of recognition in (1) gene regulatory complexes and (2) viral assemblies. Background in either biochemistry/biophysics of nucleoproteins or spectroscopy of biomolecular assemblies is preferred. English proficiency is required, as some supervision of graduate students is expected. Please send curriculum vitae and have three references forwarded to: Dr. George J. Thomas, School of Biological Sciences, BSB-403, University of Missouri, Kansas City, MO 64110. University of Missouri-Kansas City is an Equal Opportunity/Affirmative Action Employer.

### POSTDOCTORAL FELLOWSHIP

Position available immediately to study the regulation of gene expression by growth factors and cytokines in the testis. Experience in molecular biology, such as isolation of messenger RNA from tissue, Southern blots, Northern blots, PCR, and gene transfection is desirable. Send curriculum vitae and names and addresses of three references to: Dr. Patricia Morris, The Population Council, Center for Biomedical Research, 1230 York Avenue, New York, NY 10021. Email: p-morris@popcbr.rockefeller.edu.

### ASSISTANT RESEARCH SCIENTIST

**ASSISTANT RESEARCH SCIENTIST** or Postdoctoral position to study the molecular biology and mechanism of entry of *Bartonella bacilliformis*, a pathogenic human parasite of red cells and capillary endothelium (Benson, et al., *Inf. Imm.*, 54:347, 1986). Research will involve identification of the receptor on human red cells, the bacterial surface protein involved in binding and entry, the characterization of the fibrous meshwork which bind the bacteria together, and cloning and study of *Bartonella* genome. Of special interest is the mechanism by which the bacterium stimulates endothelial cell proliferation. Send curriculum vitae and names of references to: Dr. Garret M. Ihler, Department of Medical Biochemistry and Genetics, Texas A&M University Health Science Center, College Station, TX 77843-1114. Equal Opportunity/Affirmative Action Employer.



**In-vivo Synaptic  
Neurophysiology with PET  
Montreal Neurological Institute  
McGill University**

The Montreal Neurological Institute invites applications for a tenure-track position at Assistant or Associate Professor level. We are seeking an individual with expertise in the use of PET to study receptor/transmitter mechanisms underlying human neuropathology and normal brain function. The successful candidate would be expected to develop a strong independently-funded research program as well as fulfilling the responsibilities of a senior team member within a larger group of PET researchers.

The MNI has a well-established Neuroimaging group with numerous links to the clinical/basic research groups in the McGill and Montreal academic communities, a new 8-target medical cyclotron and an extensive image analysis environment. Candidates should submit a curriculum vitae, a brief statement of research interests and arrange for three letters of reference to:

Dr. Alan Evans  
Chairman  
Synaptic Neurophysiology Search Committee  
Montreal Neurological Institute  
3801 University Street  
Montreal, Quebec, Canada H3A 2B4

### **Manager of Fermentation**

Duties are: to directly supervise production technicians in the BUC area, including Wellferon 60 liter reactor, Gel preparation and Sendai preparation; responsible for large scale production of Wellferon, for the timely and efficient delivery of quality Sendai to the production area, for the timely and efficient make up of gel for the production areas, including monitoring of gel quality, inventory and replacement, and all process data management; assist in preparation of manufacturing specifications; adhere to government (U.S., U.K. & Spain) and company mandated regulatory, health and safety procedures; technical problem solving; assist in technology transfer projects; manage manufacturing related or expansion projects; generate documentation and maintain production logs; participate in training of workers and hiring process of quality technicians; conduct performance appraisals; prepares reports; assists in maintenance of working cell bank. Special requirements; Must have an M.B.A. or equivalent, a Bachelor's degree in Virology or related field, five years of experience in pharmaceutical/biotech manufacturing, experience with large scale mammalian cell culture operations, pharmaceutical validation requirements, BUC(s), Gel preparation, Sendai, secondary purification, clean room operating procedures, combination of multiple interferons, and manufacturing related computer systems, and knowledge of FDA, GMP, GLP and CPMP regulations.

Position located in West Greenwich, Rhode Island. Salary \$80,000.00 per annum; 40 hours per week. Send resume only to:

**R.I. Department of Employment and Training  
ATTN: Tessie Salabert (3rd Floor)  
101 Friendship Street  
Providence, R.I. 02903-3740  
Refer to ID #208**

# **Research Associates**

At Amgen, you'll discover a research environment that emphasizes collaboration, intellectual honesty, scientific integrity, and a supportive culture. This unique approach has helped us grow into a global biotechnology leader in just thirteen years.

### **PHARMACEUTICS**

Two positions are available for Biopharmaceutical Chemists to formulate protein drug candidates. Both positions require 2+ years' experience and a BS in Chemistry, Biochemistry, Pharmaceutical Chemistry, or related field. Experience with proteins and HPLC is highly desired. Knowledge of protein conformation, folding, and other physical properties is important. Excellent communication skills and the ability to work in a team environment are essential. (Job Code: OXP-SC-2108-S)

### **PROTEIN STRUCTURE**

This position requires either 5 years' experience (with a BS) or 2 years' experience (with a MS) in broad aspects of Protein Chemistry but specifically in protein identification and characterization. Candidates must demonstrate ability in electrophoresis (both 1D- and 2D-PAGE) and related techniques, HPLC, and amino acid sequence analysis of proteins. (Job Code: OXP-SC-1876)

At Amgen, you'll find our approach to scientific research as rewarding as it is effective. We offer a highly competitive compensation and benefits package that includes a retirement and savings plan, an on-site fitness center, and three weeks' vacation. Please mail your resume/c.v. to: Amgen Inc., Staffing, Job Code (see above), Amgen Center, Thousand Oaks, CA 91320-1789. Principals only, please. EEO-Affirmative Action Employer M/F/D/V. We recognize that diverse perspectives are a key factor in the process of discovery.

**AMGEN®**  
Discover a unique approach.



## POSITIONS OPEN



### CELL BIOLOGIST Chemical and Biological Evaluation

Bracco Research USA, the U.S. research and development labs of Bracco s.p.a., one of the world's largest *in vivo* diagnostics companies, has an opening in the Chemical and Biological Evaluation Department for a **CELL BIOLOGIST**. You would be a member of a multidisciplinary team evaluating the performance of *in vivo* diagnostic agents. Your job would be to design and use screens and animal models which complement those already in place for examining targeted delivery of Magnetic Resonance Imaging, Nuclear Medicine and Iodinated X-ray Contrast agents. You will have a Ph.D. in cell biology with at least two years of experience. You should have a good knowledge of mammalian cell culture techniques and an interest in the newer forms of drug discovery. Bracco Research USA offers a competitive salary and a generous benefits package including a company matching 401k plan. Please send a letter of introduction and your résumé to: **J. Dalton, Bracco Research USA, P.O. Box 5225, Princeton, NJ 08543-5225. Bracco Research USA is an Equal Opportunity Employer.**

**ASSOCIATE RESEARCH SCIENTIST.** The Division of Pediatric Hematology/Oncology seeks a Ph.D. with experience in molecular biology to participate in studies of red cell enzymes genetics. Submit curriculum vitae and three references by FAX (212-305-5848) to: **Sergio Piomelli, M.D., Columbia University, College of Physicians and Surgeons, 630 West 168th Street, New York, NY 10032. Columbia University is an Equal Opportunity/Affirmative Action Employer. We are particularly interested in women and minority candidates.**

**ASSISTANT RESEARCH SCIENTIST: OCULAR IMMUNOLOGIST.** The Department of Ophthalmology at the University of Florida invites applications for a full-time Assistant Research Scientist. Candidate should have a Ph.D. in immunology or a related area and two years of postdoctoral experience. Experience in cellular immunology, autoimmune disease, and the visual system essential; experience with cancer-associated retinopathy and uveitis a plus. Must be able to collaborate with and complement expertise of existing personnel and establish an energetic grant-supported research program. Recruiting deadline December 31, 1994; anticipated start date February 1, 1995. Salary negotiable. Send letter of application, curriculum vitae and names and addresses of three references to: **Paul A. Hargrave, Ph.D., Professor, Department of Ophthalmology, Box 100284 JH-MHC, University of Florida, Gainesville, FL 32610-0284. The University of Florida is an Equal Opportunity/Affirmative Action Employer.**

**LECTURER IN BIOLOGICAL SCIENCES** (Position No. P82050). The Department of Biological Sciences, University of Nevada, Las Vegas (UNLV) seeks applicants for a non-tenure-track faculty position as **LECTURER** of Biological Sciences. Responsibilities will include lectures in and coordination of laboratories for a General Biology Course for biology majors. Experience in and commitment to undergraduate biology instruction is expected. Preference will be given to applicants with a Ph.D. degree in one of the life sciences. Salary is competitive and the position will begin in the fall semester 1995. Send curriculum vitae, a letter describing teaching philosophy and arrange for three letters of recommendation to be sent to: **Dr. Stanley Hillyard, Department of Biological Sciences, University of Nevada, Las Vegas, Box 454004, Las Vegas, NV 89154-4004. FAX: 702-895-3956.** Review of applications will begin January 31, 1995, and will proceed until the position is filled. *UNLV is an Equal Opportunity/Affirmative Action Employer and employs only U.S. citizens and aliens authorized to work in the United States.*

**FIELD VERTEBRATE ZOOLOGIST** to teach comparative anatomy, general zoology, and specialty courses. Available August 1995. Ph.D. degree and commitment to undergraduate education is required. Submit curriculum vitae, all transcripts, three letters of reference, and statement of interests by 3 February 1995 to:

**Personnel Office (EOMB)  
Northeastern State University  
Tahlequah, OK 74464**

*An Affirmative Action/Equal Opportunity Employer*

## POSITIONS OPEN

### MOLECULAR RESEARCH INSTITUTE RESEARCH STAFF SCIENTIST POSITIONS

The Molecular Research Institute, a multidisciplinary research facility with emphasis on application of computational chemistry to biomedical and environmental problems, located near Stanford University, currently has multiple positions available at two levels: **STAFF SCIENTIST I**, including postdoctoral fellows, with opportunities to integrate into ongoing research projects; **STAFF SCIENTIST II** that offers additional opportunity to develop new projects initiated by the investigator. The Institute invites applications from investigators in i) computational pharmacology combining construction of 3D models of receptors with development of 3D pharmacophores and new analog design and ii) computational biochemistry focusing on the structure, spectra and function of heme proteins, in collaboration with experimentalists in the fields of molecular biology, pharmacology, structural biology and protein biochemistry. Applicants should send curriculum vitae and names of three references to: **Dr. Gilda Loew, President, Molecular Research Institute, 845 Page Mill Road, Palo Alto, CA 94304.** Staff Scientist II applicants should also include description of research accomplishments and areas of future interest. Salary ranges are competitive and commensurate with experience. *The Molecular Research Institute is an Equal Opportunity Employer.*

### MICROBIOLOGY AND IMMUNOLOGY Predoctoral and Postdoctoral Training in Virology

The Department of Microbiology and Immunology, UCLA School of Medicine, invites applications for **TRAINING POSITIONS** in virology. Research programs include the cellular and molecular basis of latency and pathogenesis of herpes viruses (**Jack G. Stevens**), molecular biology of influenza viruses, and paramyxoviruses (**Debi P. Nayak**), immune response, gene regulation and transformation by papilloma viruses (**Felix O. Wettstein**), molecular mechanism of viral persistence and immune suppression (**Rafi Ahmed**), molecular biology of picornaviruses and regulation of eukaryotic transcription (**Asim Dasgupta**), molecular genetics and pathogenesis of human retroviruses (**Irvin S.Y. Chen, Andrew Kaplan**), and molecular basis of transcriptional activation of herpes virus genes (**Lawrence T. Feldman**). For predoctoral training leading to the Ph.D. degree, contact: **Dr. Asim Dasgupta**; for postdoctoral positions, contact: **Dr. Debi P. Nayak, Department of Microbiology and Immunology, UCLA School of Medicine, Los Angeles, CA 90024-1747.** Deadline for predoctoral applications for fall 1995 is January 15, 1995. *An Equal Opportunity/Affirmative Action Employer.*

### BAXTER HEALTHCARE Chicago and area Regulatory Toxicologist

Challenging, interdisciplinary opportunity with high visibility and broad responsibility. Overview toxicology studies of pharmaceuticals and medical products for regulatory submissions, hazard assessments and product stewardship. Requires a Ph.D. in toxicology, pharmacology or related science, knowledge of product safety testing, FDA regulations, communication skills and self-motivation. Board certification a plus.

Please send résumé to: **Baxter Healthcare, I.V. Systems Division, Attn: Human Resources, WG3-2S, P.O. Box 490, Round Lake, IL 60073-0490** or FAX to **708-270-5897.** Baxter Healthcare offers competitive compensation, including a 401(k) plan, educational assistance and relocation package. *An Equal Opportunity Employer/Minorities/Females.*

### MOLECULAR ONCOLOGY

A **SCIENTIST** with experience in molecular biology of cancer is sought to lead a basic and translational research program in neuro-oncology at Mayo Clinic Jacksonville. The program will complement current Mayo clinical and basic research programs including the genetics of gliomas and abnormal signal transduction. The position is accompanied by substantial space allocation in the recently completed 25,000-square-foot Birdsall research building and start-up funds. The applicant should have demonstrated skills required to successfully compete for extramural research funds and to assume a position of leadership in a research program. Respond to: **Dr. Robert Wharen or Dr. Chris Thomas, Mayo Clinic Jacksonville, 4500 San Pablo Road, Jacksonville, FL 32224.**

*An Equal Employment Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### UNIVERSITY OF CALIFORNIA SANTA BARBARA

#### School of Environmental Science and Management

We invite applications for two **SENIOR POSITIONS** in the new graduate school: (a) Earth System Science, including the physical climate system, hydrologic cycle, biogeochemical cycles, and their interactions; (b) Environmental Policy and Resource Management, including environmental regulation and policy analysis, economic valuation, and resource management. We seek distinguished applicants with strong publication records, vigorous, original research programs, evidence of excellence in teaching, and a commitment to helping start a new, interdisciplinary program that will admit its first students in fall 1996. Appointment level is open. Rank and salary will depend on teaching and research experience.

Application deadline is January 27, 1995. Start date is July 1, 1995. Send curriculum vitae, names of four references, statement of proposed research and teaching interests, and reprints of no more than five publications to: **Jeff Dozier, Dean, School of Environmental Science and Management, University of California, Santa Barbara, CA 93106. Email: dozier@crsc.ucsb.edu.**

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

### VASCULAR MEDICINE/BIOLOGY FACULTY POSITIONS

#### Harvard-Thorndike Laboratories Beth Israel Hospital Cardiovascular Division

The Cardiovascular Division at Beth Israel Hospital is inviting applications from M.D. or Ph.D. **SCIENTISTS** for faculty positions in our Program in Vascular Biology. These faculty positions will complement existing interests in thrombosis, angiogenesis, and vascular repair; investigators working in these or related areas (e.g., vascular development, atherosclerosis) are particularly encouraged to apply. The successful candidate will be expected to establish an independent laboratory supported by extramural funding. The research laboratories of the Program will be located in newly renovated laboratories that are part of the Harvard-Thorndike Laboratories of Beth Israel Hospital. The level of appointment and salary will be commensurate with experience.

Please send applications including a complete curriculum vitae, future research plans, relevant reprints, and names of references to: **J. Anthony Ware, M.D., Cardiovascular Division, Beth Israel Hospital, 330 Brookline Avenue, Boston, MA 02215.**

**FLOW CYTOMETRY SPECIALIST:** The Salk Institute is seeking a Flow Cytometry Specialist to be responsible for operation and maintenance of a Becton-Dickinson FACStar-plus cell sorter, a FACScan analytical cytometer, and associated computer systems: Macintosh Quadra, Sun Microsystems SPARC Station 2, Hewlett Packard Consort 32, and IBM PC 486 clone. The position would also involve consultation with investigators on experimental design and the interpretation of flow cytometric data. The ideal candidate will have one or more years of experience in the operation of a flow cytometry facility, a strong background in computer science, knowledge of fundamental cell biology, biophysics, and electronics. We are seeking a person who is able to function independently and who would be challenged by dealing with a diversity of operational and experimental problems in a small, primarily research-oriented flow cytometry facility. Those interested should send résumé or curriculum vitae, description of experience, and names of three references to: **The Salk Institute, Department HR 2788, 10010 North Torrey Pines Road, La Jolla, CA 92037. The Salk Institute is an Affirmative Action Employer.**

The Department of Surgery at Wayne State University, School of Medicine invites applications for a **FACULTY POSITION**, rank to be determined (research track). A Ph.D. or M.D./Ph.D., required. Two years of postdoctoral experience is required. Faculty members are expected to establish a vigorous independent research program and to participate in teaching graduate, medical and postdoctoral students. Send curriculum vitae to:

**David Fromm, M.D.  
Professor and Chairman  
Department of Surgery  
Wayne State University  
6C-UHC, 4201 St. Antoine  
Detroit, MI 48201**

*Wayne State University is an Equal Opportunity/Affirmative Action Employer.*

## LATEX AGGLOUTINATION PRINCIPAL SCIENTIST

**Instrumentation Laboratory (IL)**, a worldwide leader in the research and development of reagent biomedical instrumentation test systems, is currently seeking an individual for its Lexington, Massachusetts, facility. Responsibilities include designing and performing experiments to develop latex agglutination immunoassays to be placed in automated chemistry and coagulation instrumentation systems. Individual must possess and maintain comprehensive knowledge of scientific literature and competitive products. Qualified candidate will have a Ph.D. in biochemistry or related science, plus two to five years industrial/academic experience in the latex agglutination immunoassay field. Thorough knowledge of protein chemistry, protein coating onto synthetic surfaces by physical or chemical means, colloidal chemistry, optics, and scattering laws is required.

IL offers an excellent salary and benefits package including 401(k) plan. Interested candidates should submit resume and salary history to: *Christopher Hatt, Human Resources, Instrumentation Laboratory, 113 Hartwell Avenue, Lexington, MA 02173-3190.* IL is an Equal Opportunity Employer.

## SCIENTISTS/ SR. SCIENTISTS

Pharmacia Biotech Inc., Molecular Biology Reagents Division, is a leader in the research, production and marketing of molecular and cell biology products. We have immediate openings for Scientists for our R&D Staff.

These individuals will possess a PhD degree in Molecular Biology or related field, and be skilled in any or all of the following techniques or disciplines: amplification, sequencing, cloning and expression, molecular immunology, enzymes and protein biochemistry. In addition, experience leading project teams in product development activities in an industrial setting is highly desirable, combined with excellent interpersonal and communication skills.

We offer a competitive salary and comprehensive benefit package. For consideration, send CV/resume and salary history/requirements to: **Manager, Human Resources, PHARMACIA BIOTECH INC., Molecular Biology Reagents Division, 2202 N. Bartlett Ave., Milwaukee, WI 53202.** Equal Opportunity Employer M/F/D/V.



**Pharmacia  
Biotech**

## Postdoctoral Research Fellowship

The National Institute on Aging, National Institutes of Health, Public Health Service is seeking a qualified molecular biologist for an Intramural Research Training Award (IRTA) Fellowship dedicated to research involving programmed cell death in the nervous system. Areas of study include signal transduction and regulation of cell cycle. The candidate should have a Ph.D. or M.D. granted within the last five years, and experience in RT-PCR and PCR-based cloning techniques. Other desirable skills include mammalian cell culture, protein phosphorylation assays, and familiarity with automated DNA sequencing. The position is located on the NIH campus in Bethesda, Maryland. Please send a cover letter and curriculum vitae to:

**Herbert W. Harris, M.D., Ph.D.,  
Laboratory of Neurosciences,  
National Institute on Aging,  
National Institutes of Health,  
9000 Rockville Pike, Building 10,  
Room 6C103, Bethesda, Mary-  
land 20892. Fax (301) 402-0074;  
Tel (301) 496-8970.**

NIH is an Equal Opportunity Employer

The University of  
**ILLINOIS**  
at Urbana-Champaign

### Cell and Developmental Biologist Assistant Professor

The Department of Cell and Structural Biology at the University of Illinois, Urbana-Champaign invites applications for a tenure track position as an Assistant Professor. Ph.D. scientists interested in establishing an outstanding research program in cell, molecular, or developmental biology, in a young, expanding department are encouraged to apply. Responsibilities will include teaching cell or development biology. Position is full-time and available beginning in the 1995-1996 academic year. Salary commensurate with experience.

Substantial start-up funds and laboratory facilities will be provided. The exceptional physical and intellectual resources of the University of Illinois, include: the Transgenic Animal Facility, Center for Electron Microscopy, Genetic Engineering Facility providing oligonucleotide and peptide synthesis and sequencing, Cell Science Laboratory-providing hybridomas and flow cytometry, and the National Center for Supercomputing Applications.

Applicants should submit a curriculum vitae and a summary of research interests, and arrange to have three letters of reference sent to: Ann Zielinski, Search Coordinator, Department of Cell and Structural Biology, University of Illinois, 506 Morrill Hall, Urbana, IL 61801. Telephone: (217)333-6118.

To ensure full consideration, applications should be received by January 15, 1995. Interviews may be conducted before this date, but all applications received by then will be given full consideration. Final selection will not be made until after this date.

The University of Illinois is an Affirmative Action, Equal Opportunity Employer.

JOIN OUR FAMILY

## RESEARCH SCIENTIST

### Saint Francis Campus

Saint Francis Hospital and Medical Center Located in Hartford, Connecticut, is seeking candidates to join our Department of Research and our bone cell and molecular biology group. Candidates should have completed a doctoral degree and a postdoctoral fellowship and have prior experience in molecular biology. Candidates will be eligible for an appointment at the University of Connecticut School of Medicine. Senior postdoctoral fellows will also be considered. Interested candidates should send resume and references to:

**Dr. Ernesto Canalis, Saint Francis Hospital and Medical Center, 114 Woodland St., Hartford, Connecticut 06105-1299, Fax: (203) 548-5415.**



SAINT FRANCIS  
Hospital and Medical Center



MOUNT SINAI  
HOSPITAL



Blue Ridge Center

EEO/AA - M/F/D/V  
Pre-Employment Drug Testing

## SENIOR RESEARCH ASSOCIATE

### Protein Biochemistry

Pioneer Hi-Bred International, Inc., a world leader in agri-genetics, seeks a Senior Research Associate-Protein Biochemistry. Responsibilities include developing experimental strategies for optimizing the expression and targeting of proteins/peptides in plant cells, designing genes for engineered proteins, subsequent recombinant expression and structure-function characterization for novel properties. **EDUCATION/ EXPERIENCE:** a BS degree in Biochemistry/ Molecular Biology or equivalent, plus at least 4 years directly related lab experience in the application of molecular biology skills to understanding protein structure-function; or a MS degree plus at least 2 years of experience. Excellent interpersonal skills, high motivation level, familiarity with computers/ computational skills and ability to work in a team environment are essential.

We offer excellent compensation, benefits and career growth potential, as well as excellent facilities and a highly cooperative research environment. Please send cover letter indicating job number and C.V. by December 25, 1994 to: **Pioneer Hi-Bred International, Inc., Ms. Chris Fitch, Attn: Ms. Fitch Job #1037, Trait and Technology Development, Core Technology Department, 7300 NW 62nd Avenue, P.O. Box 1004, Johnston, IA 50131-1004.** We are an Equal Opportunity Employer.



**PIONEER**

**PIONEER HI-BRED INTERNATIONAL, INC.**

# Molecular Diagnostics

## Sr. Research Scientist

Bio-Rad Laboratories is a world leader in the fields of life science research products, clinical diagnostics and analytical instruments. Our continued growth has created a need for a dynamic scientific professional to work in our Molecular Diagnostics Division.

The successful candidate will have an MS or PhD in Molecular Biology or Biochemistry with 3+ years experience in nucleic acid technology and DNA amplification methodology. Experience in product development and strong writing skills desired.

For consideration, please send your resume to: Bio-Rad Laboratories, 2000 Alfred Nobel Dr., Dept. 638, Hercules, CA 94547. An EEO/AA Employer.

**BIO-RAD**

**Bio-Rad Laboratories**

## ANNOUNCEMENT

### PROGRAM ANNOUNCEMENT TO HOST SCIENTISTS & ENGINEERS FROM THE FORMER SOVIET UNION

The National Research Council's Cooperation in Applied Science and Technology (CAST) program invites applications from American scientists and engineers who wish to host colleagues from the Newly Independent States (NIS) of the former Soviet Union for joint research in applied scientific fields. This program is intended to support collaborative projects with a strong potential for commercial applications and/or potential to improve the quality of life in the U.S. and NIS. Of particular interest are projects that will enable NIS scientists and engineers who have worked in defense-related research to apply their skills to civilian activities. Incentive grants of up to \$3,000 for travel and \$1,000 per month for six to twelve months for living expenses will be provided. Of particular interest to the program are applications that demonstrate a strong commitment to the collaboration on the part of the U.S. host and/or host institution (e.g., matching funds, supplementary in-kind support). Proposals are invited in all branches of applied science and engineering. Special consideration will be given to American hosts who wish to collaborate with young NIS specialists.

Application Deadlines are as follows:

(1) **March 1, 1995: For visits beginning September 30, 1995.**

(2) **October 1, 1995: For visits beginning by June 30, 1996.**

For more information and/or to receive an application packet, please contact the NRC Office for Central Europe and Eurasia. Address inquiries to: National Research Council; Office for Central Europe and Eurasia (FO2014); 2101 Constitution Avenue, NW; Washington, DC 20418; Telephone: 202/334-3680; Fax: 202/334-2614; Internet: OCEE@NAS.EDU.

### DEAN COLLEGE OF LIFE SCIENCES UNIVERSITY OF MARYLAND AT COLLEGE PARK

The University of Maryland at College Park invites applications and nominations for the position of Dean of the College of Life Sciences. The Dean of the College provides both academic and administrative leadership and reports directly to the Vice President for Academic Affairs/Provost. The University of Maryland at College Park is the state's land grant and flagship institution of higher education, a comprehensive research-oriented, public university with almost 35,000 students in baccalaureate, masters and doctoral programs. The Life Sciences College has a state budget of over 12 million dollars and attracts over 14 million dollars in contracts and grants. The College has approximately 100 tenured faculty, 2300 undergraduate majors and 600 graduate students.

Candidates should have an earned doctorate, a record of teaching and scholarship commensurate with appointment as a tenured professor in a department of the College, and a demonstrated capacity for educational leadership in the life sciences. The University of Maryland at College Park takes very seriously its commitment to diversity and affirmative action, and strongly encourages the application and nomination of both female and minority candidates. The University is an Affirmative Action, Equal Opportunity Employer.

For best consideration, applicants should send us: (1) a letter of interest setting forth your ideas concerning leadership in the life sciences in the 21st century; (2) a curriculum vitae; and (3) preferably the names, addresses and telephone numbers of at least four references who can be contacted by the search committee. The materials should be sent to Dean Irwin L. Goldstein, Chair, Life Sciences Dean Search Committee, c/o College of Behavioral and Social Sciences, University of Maryland, College Park, MD 20742-7225. Telephone calls (301-405-1680) or email (e-mail: IRV@bss2.umd.edu) to Professor Goldstein to discuss this position are welcome. For best consideration, application materials should be received by January 23, 1995. The preferred appointment date is July 1, 1995.



The Department of Biological Sciences at Northern Arizona University invites applications for 2 tenure-track **Assistant Professors** to commence August 1995 in the following areas: **Developmental/Molecular Biology:** Teaching may include undergraduate and graduate developmental biology, as well as participation in cell biology and physiology courses. PhD required in area of application or in related field. **Biology Education:** Qualifications include a minimum of 3 years experience teaching at the middle school and/or secondary level and a doctorate in science education with emphasis in biology. Teaching responsibilities may include seminars and lectures in teaching biology for both pre-service and in-service teachers as well as in introductory biology, and/or content areas of expertise. Working individually with student teachers is also required. Starting at the associate professor level will be considered for the Biology Education position.

The Department of Biological Sciences enjoys a diversity of research interests that spans the general areas of cellular and molecular biology, ecology and behavior, and physiology. Numerous opportunities for collaborative research exist. The successful candidate should have a demonstrated competency in teaching. Preference will be given to candidates with postdoctoral experience. Candidates will be expected to establish a strong extramurally funded research program, collaborate with faculty in interdisciplinary research, and help direct biology graduate students. Applications should include a curriculum vitae, statements of research and teaching interests, and three letters of recommendation. Review of applications will begin January 1, 1995 and will continue until the positions are filled. Please forward application materials to: Biology Search Committee, Department of Biological Sciences, Box 5640, Northern Arizona University, Flagstaff, AZ 86011. Northern Arizona University is an Equal Opportunity/Affirmative Action Employer.



### Biotechnology Laboratory Production Manager

Operon Technologies, Inc., a growing biotechnology company, has an opening for a Laboratory Production Manager to oversee scale up and all ongoing production processes for newly developed product. Candidate will hire, train, and supervise production staff. Position will interact on a regular basis with R & D for process refinement. Experience in recombinant DNA techniques required. M.S. or Ph.D. in molecular biology and a minimum of 4 years management experience required. Superior organizational and interpersonal skills are a must. Operon offers a highly competitive salary and benefits package. Resumes only to:

**Operon Technologies, Inc.**  
**Director of Human Resources**  
**1000 Atlantic Avenue, Suite 108**  
**Alameda, CA 94501**

### JUNIOR FACULTY POSITION SECTION OF IMMUNOBIOLOGY YALE UNIVERSITY

The Section of Immunobiology seeks applicants for a junior faculty position. Qualified applicants in all areas of immunobiology are invited to apply. We are particularly interested in candidates who will complement but not duplicate research of the existing faculty. Research interests already represented within the Section of Immunobiology include T lymphocyte activation, differentiation and tolerance; T lymphocyte development; antigen processing and presentation; transcriptional regulation; cytokines; immunoglobulin and T-cell receptor gene rearrangement; and autoimmunity. Candidates are expected to develop an independent research program and to participate in departmental teaching. The Section of Immunobiology is committed to increasing representation of members of minority groups and women on the faculty and particularly encourages applications from such candidates. A candidate's application package must include a curriculum vitae, a summary of present and future research interests and three letters of recommendation. Completed applications should be received at the address below no later than Feb 15. This position was advertised in Spring 1994. Persons who have already applied need not re-apply, except to update their applications.

**Dr. Kim Bottomly**  
**c/o Administrator**  
**Section of Immunobiology**  
**Yale University School of Medicine**  
**PO Box 208011**  
**New Haven, CT 06520-8011**

*An Equal Opportunity/Affirmative Action Employer. Women and minority candidates are encouraged to apply.*





## THE CLEVELAND CLINIC FOUNDATION NEUROPATHOLOGIST

The Cleveland Clinic Foundation is seeking a Board-certified Neuropathologist to fill a position at the Assistant to Full Staff level, with joint appointments in the Departments of Pathology and Neurosciences. Applicant must have an independent research program, and will be expected to devote 20% effort to diagnostic neuropathology. Competitive salary, generous start-up funds, and excellent opportunities for interactions with programs in the Departments of Neurology, Neurosurgery, and Neurosciences are available. Neuroscience programs at The Cleveland Clinic Foundation are undergoing a rapid growth phase, with several new Staff appointments planned in the near future. Candidate should send CV, name and fax number of three references, and brief statement of research interest to: Dr. Bruce D. Trapp, Chairman, Department of Neurosciences - NC/30, The Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, Ohio 44195. The Cleveland Clinic Foundation is an Equal Opportunity/Affirmative Action Employer.

## THE CLEVELAND CLINIC FOUNDATION NEUROSCIENCES FACULTY

Department of Neurosciences, The Cleveland Clinic Foundation Research Institute, seeks an outstanding candidate to fill a Faculty Position at the Assistant to Full Staff level. Applicant must have a Ph.D. and/or M.D., an active independent research program and utilize state-of-the-art techniques to investigate neuronal function as it relates to the pathogenesis of epilepsy. Competitive salary and generous start-up funds are available. Epilepsy programs in the Departments of Neurology and Neurosurgery are very active and provide an excellent opportunity for collaborative studies. The Department of Neurosciences is undergoing a rapid growth phase with several new Staff appointments planned in the near future. Candidates should send CV, name and fax number of 3 references, and brief statement of research interests to: Dr. Bruce D. Trapp, Chairman, Department of Neurosciences - NC/30, The Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, Ohio 44195. The Cleveland Clinic Foundation is an Equal Opportunity/Affirmative Action Employer.

## Post Doctoral Fellow

### Background in Molecular Biology

**\$A36K - \$A42K + Superannuation**

*Division of Plant Industry, Canberra ACT, Australia*

CSIRO Australia is one of the largest and most diverse national research institutions in the world. The Division of Plant Industry is seeking a Post Doctoral Fellow to work on a project isolating genes critical for the initiation of flowering. This project is supported by the Ken & Yasuka Myer Plant Science Research Fund.

Flowering in mutants and ecotypes for *Arabidopsis* flowering can be promoted by treatment with cold. The demethylating agent 5-Azacytidine can mimic the cold treatment in promoting flowering suggesting that methylation is involved in control of cold induced flowering. The plant hormone gibberellic acid can also substitute for cold treatment and induce flowering in the same ecotypes and mutants as *Arabidopsis*. One of the enzymes involved in GA biosynthesis kaurenoic acid hydroxylase, can be induced specifically in the apex of plants by low temperature treatment. The Post Doctoral Fellow would clone the gene for kaurenoic acid hydroxylase and determine its involvement in the initiation of flowering.

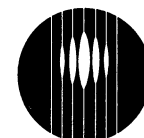
We are looking for a person with a PhD and a strong background in Molecular Biology. Proven research ability in molecular biology, particularly in plants is required.

This appointment is for a term of three years.

For further information contact Liz Dennis on 61 6 246 5061. The Duty Statement and Selection Criteria can be obtained by contacting Julie Clements on 61 6 246 5357 or fax 61 6 246 5000.

Address your application for the above position, quoting Reference No PG:94042 and include details of your experience, skills and qualifications. Please mark 'Confidential' and forward to: **The Personnel Section, CSIRO Division of Plant Industry, GPO Box 1600, Canberra ACT 2601, Australia**, by December 16, 1994.

CSIRO IS AN  
EQUAL OPPORTUNITY EMPLOYER



CSIRO  
AUSTRALIA

adcorp7156

## Attention Non-U.S. Advertisers!

SCIENCE announces the 1995 pounds sterling rate card! Advertisers not based in the United States may choose to pay in U.S. dollars or pounds sterling.

SCIENCE continues its surge in the global marketplace, meeting the needs of advertisers! We are proud of our 71% growth in the non-U.S. market since 1991!

Contact your advertising representative for more information:

**In the U.S., call Janis Crowley at (212) 496-7704,  
or fax to (202) 682-0816.**

**In Europe, call Gordon Clark at (44) 0223 302067,  
or fax to (44) 0223 302068.**

**In Japan, call Mashy Yoshikowa at (81) 3 3235-5961,  
or fax to (81) 3 3235-5852.**

**In Australia, call Keith Sandell at (61) 02 922 2977,  
or fax to (61) 02 922 1100.**

# SCIENCE

## Max-Planck-Institut für Infektionsbiologie, Berlin

offers a position for a

### Research Scientist

in the area of cell-mediated immunity against bacterial pathogens with particular emphasis on the in situ characterization of tissue reactions.

Applicants with Ph.D. or M.D. should have a minimum two-years post-doc experience in histology (in situ PCR, immunohistology) and a strong interest in developing a new research group.

The position is limited to five years. Salary according to BAT.

Applications including CV, list of publications and at least two names of referees should be submitted to:

Prof. Dr. Stefan H.E. Kaufmann  
Max-Planck-Institut  
für Infektionsbiologie  
Jägerstrasse 10/11  
10117 Berlin



## FACULTY of MEDICINE CHAIR OF PSYCHIATRY

The University Court invites applications for a second Chair of Psychiatry in the Faculty of Medicine. This is the Chair held until 1991 by Professor R. E. Kendell. The post will be tenable from a date to be arranged. This Chair is being reactivated in order that the Department of Psychiatry can make full use of the opportunities for research created by the advances in Biological Psychiatry. The University seeks to appoint to this Chair a clinical scientist who has already made significant contributions to Biological Psychiatry and who can demonstrate a capability for obtaining appropriate financial support to develop an innovative research programme in this highly rated department.

Excellent facilities are available for imaging, genetic and neuropathological research. The clinical base is well developed and it is anticipated that the person appointed to this post will be able to make appropriate use of some or all of the facilities available here.

The new Chair will be part of the staff of the Department of Psychiatry, which has an extensive research programme and substantial teaching commitments, including a three year course leading to an MPhil in Psychiatry. It is anticipated that the holder of this post will have a substantial research interest, but the balance between the research, teaching, clinical and administrative work of the post will be negotiable.

Salary will be within the clinical professorial range.

Please quote REF: SC 490530.

Informal enquiries may be addressed to Professor Eve C. Johnstone, Head of the Department of Psychiatry,  
Tel: 031-537 6000, Ext. 46261.

Applications, giving the names and addresses of three referees, should be lodged with:

**THE SECRETARY TO THE UNIVERSITY,  
THE UNIVERSITY OF EDINBURGH  
PERSONNEL OFFICE,  
1 ROXBURGH STREET,  
EDINBURGH EH8 9TB**

where further particulars may be obtained.

Candidates from within the United Kingdom should send 16 copies of their application. Overseas candidates need only send one copy. Applications by Fax: 031-650 6509 should be confirmed by mail.

Closing date: 9th January, 1995.



*The Royal Society*

## VACANT RESEARCH APPOINTMENTS 1995

Applications are invited for about 35 Royal Society University Research Fellowships, tenable in the first instance for five years from 1 October 1995 (or later in the academic year 1995-96). Renewals of three years and then a further two may be possible. The appointments available embrace all branches of science, including agriculture, medicine, mathematics, engineering and technology.

Research Fellows are paid on the academic and academic-related staff (Lecturer A and B) salary scale which currently runs from £14 756 (age 26) to £25 735 (age 39) plus three additional discretionary points up to £28 765. Starting salaries will be on this scale, with London Allowance where appropriate, and will rise incrementally each year. A limited number of merit increments will be awarded each year to reward outstanding performance. Annual research expenses (up to about £11 000 for 1995-96) will be available together with travel expenses and a contribution to baggage costs for successful applicants from overseas and their families.

Applicants must have a Ph.D. or equivalent research experience. They should be at least 26 but not have passed their 40th birthday by 1 October 1995 and have between two and seven years postdoctoral experience. Applicants over 40 may be considered under very exceptional circumstances; they should contact the Research Appointments Department at The Royal Society for advice before submitting an application. Fellowships must be held in a university in the United Kingdom. Those already holding substantive posts in a UK university will not be considered. University Research Fellowships are open only to European Community citizens who are either employed in the UK or who, if not employed, have been resident in the UK for a continuous period of three years other than for the sole purpose of receiving full-time education.

Application forms and further information are available from the Research Appointments Department, The Royal Society, 6 Carlton House Terrace, London, SW1Y 5AG (Fax 0171-930 2170). Closing date 17 February 1995. Application forms are not available after 3 February 1995 and applications arriving after 4 p.m. on 17 February will not be considered.

## Parasitologists

### Lead research at a world renowned New Zealand Centre

This is an opportunity to lead a parasitology at a research centre known worldwide vaccine for development, control measures and disease management techniques.

Part of AgResearch, Wallaceville Animal Research Centre, just 30km from the capital city of Wellington, has been New Zealand's centre for health and disease control since 1905.

Major advancements made here include starting the world's first programme to eradicate hydatids developing the world's first genetically engineered vaccine to control multi-celled parasites.

As leader of the parasitology programme, the role includes managing a \$4 million budget and 46 full and part-time scientific staff. As well as fulfilling scientific and management responsibilities, some time will be sent offshore looking for funding.

We have established links and commitments research with universities and specialist search centres worldwide and support will be provided for the applicant to attend conferences and maintain their publications record.

The successful applicant will have an international profile in parasitology, hold a PhD and have held a number of post-doctoral appointments. An impressive research record and the ability to relate well to clients is also desirable.

To find out more about this opportunity, please contact or send your application to:

**Margot MacGillivray,  
Human Resources Manager, AgResearch,  
Wallaceville Animal Research Centre,  
PO Box 40063, Upper Hutt, New Zealand.  
Telephone: 64-4-528 1371 or 64-4-528 6089,  
fax: 64-4-528 1380,  
email: macgillivm@agresearch.cri.nz**

**AgResearch is an equal employment  
opportunities employer.**





**R  
A  
N  
B  
A  
X  
Y**

## RANBAXY

**Requires**

### RESEARCH PROFESSIONALS IN N.D.D.R.

We are one of the largest research-based pharmaceutical companies in India with global presence and commitment to invest a significant portion of our annual turnover into R&D. We have recently set up a multi-million dollar state-of-the-art New Drug Discovery Research (NDDR) facility. The focus of our R&D endeavors is the discovery and development of novel therapeutic agents as antibacterial, antifungal, anticancer, cardiovascular and CNS active agents.

We invite highly motivated senior professionals holding Ph.D. and/or M.D. Degree to work in the above areas with relevant research experience of at least 5 years. We also have openings in Receptor Binding, Pharmacokinetics, Toxicology, Medicinal Chemistry, Biochemical Pharmacology and Microbiology.

We offer a very attractive compensation package and potential for future growth. For immediate consideration, please send your resume with name and fax no. of three references to Vice President (Human Resources), Ranbaxy Laboratories Limited, 19 Nehru Place, New Delhi - 110019. Forward your particulars by courier or fax at (91-11)681-4111 or 6476288 within 7 days.



**THE UNIVERSITY  
OF BIRMINGHAM**

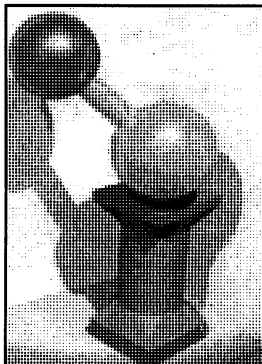
## CHAIR OF APPLIED PSYCHOLOGY SCHOOL OF SPORT AND EXERCISE SCIENCES

Applications are invited for a new Chair of Applied Psychology in the School of Sport and Exercise Sciences. This Chair complements the recent expansion within the School of physiology, biochemistry and biomechanics. The successful candidate will have an established research reputation in psychology as related to sport, exercise or health and will be expected to take the lead in developing research and teaching. Part of the support available will be the filling of two Lectureships, or equivalent posts.

Further particulars may be obtained from Mr P.J.F. Scott, Director of Staffing Services, The University of Birmingham, Edgbaston, Birmingham B15 2TT. Telephone 021 414 3842 or fax 021 414 7043.

The closing date for applications is Wednesday 21st December, 1994

The University is an exempt Charity which exists to advance learning to the highest level for the benefit of its students and society at large.



# Molecule of the Year!

Each year, in the Molecule of the Year issue, **SCIENCE** highlights a discovery which played a key role in the advance of science during that year. In 1992, the editors selected nitric oxide. The winner of last year's Molecule of the Year Award was p53, a tumor suppressor in humans. Which molecule will win this year? Find out when **SCIENCE** announces the 1994 winner in the 23 December issue. Advertise in the issue everyone will be waiting for this December.

**The Molecule of the Year issue publishes 23 December 1994.**  
Advertising space reservation deadline is 6 December 1994.

In the U.S., call Janis Crowley at (212) 496-7704  
or FAX: (202) 682-0816.  
Internet: science\_classifieds@aaas.org

In Europe, call Gordon Clark at 0223 302 067  
or FAX: 0223 302 068.

# SCIENCE



## POSITIONS OPEN

### DIAGNOSTICS COAGULATION R&D

Ph.D. scientists to develop *in vitro* diagnostic reagents in clinical chemistry and vascular biology. Experience in enzymology, protein purification techniques and/or lipid chemistry is necessary (for additional details, Email: [douglasm@sial.com](mailto:douglasm@sial.com)). We offer a competitive salary and full benefits package. For confidential consideration, mail or FAX curriculum vitae:

Beverly Basler  
Sigma Diagnostics  
545 South Ewing  
St. Louis, MO 63103  
FAX: 314-531-2586

We are an Equal Opportunity Employer

## COURSES & TRAINING

### BIOLOGY OF DISEASE VECTORS COURSE COLORADO STATE UNIVERSITY FORT COLLINS, COLORADO USA 18 June to 1 July 1995

The course provides a broad perspective of vector biology by emphasizing newer knowledge and techniques. Some subjects covered are host seeking, blood feeding, gene regulation, molecular systematics and population biology. The course is designed primarily for advanced graduate students, postdoctoral fellows, and independent investigators. Limited to 30 students. Financial aid will be provided based on need. For application forms and further information contact: Dr. Barry J. Beaty, Arthropod-Borne and Infectious Diseases Laboratory, Colorado State University, Fort Collins, CO 80523 USA. Telephone: 303-491-2988; Fax 303-491-0813.

Colorado State University is an Equal Opportunity/Affirmative Action Institution and complies with all federal and Colorado state laws, regulations, and executive orders regarding affirmative action requirements in all programs.

## MARKETPLACE



UCB BioProducts  
Brussels  
322 3862111

Gastrointestinal Hormones  
Related Peptides  
Antisera  
Peptide Innovations  
800 522 3310  
919 847 0161

Circle No. 34 on Readers' Service Card

## CUSTOM DNA SYNTHESIS

PURE & SIMPLE

Price **\$2<sup>19</sup>**  
as low as per base plus set up

- Superb Technical Support
- Impeccable Quality
- World's Fastest Service

## MIDLAND

THE UNDISPUTED #1  
CUSTOM DNA SYNTHESIS SERVICE  
THE MIDLAND CERTIFIED REAGENT COMPANY  
3112-A West Cuthbert Avenue  
Midland, Texas 79701  
Phone 1-800-247-8766 FAX 915-694-2387

Circle No. 1 on Readers' Service Card

## MARKETPLACE

## GUARANTEED PEPTIDES

**\$18.**

per residue  
resin peptide  
\$200/peptide min.

No setup chg.  
25± mmole  
8-20 residues  
5 working days

Trifunctional amino acids  
slightly higher; cleavage, purification and analysis extra.

**Advanced ChemTech**

Fax(502) 968-1000 • 1-800-456-1403

Circle No. 41 on Readers' Service Card

## \$195 CUSTOM PEPTIDES

- Mass Spec. • 15-30 mg.
- 8-20 residues.

Special Offer thru December 1994



CHIRON  
MIMOTOPES  
PEPTIDE SYSTEMS

North America:  
Tel: 1-800-338-4965  
Fax: 1-800-654-5592

Circle No. 22 on Readers' Service Card

## ABS Bioreagents™

Custom Receptor Binding,  
Enzyme, and RNA Preparations  
Fast, Cost-Effective Service  
Analytical Biological Services Inc.  
(800) 391-2391

Circle No. 17 on Readers' Service Card

## ZAP™ Those Radicals!

Reproducible chemiluminescent detection of oxygen free radicals using ZAP: opsonized zymosan with luminol. Isolated cell or whole blood assays.

We Deliver Worldwide.



CARDINAL  
ASSOCIATES INC.

1-800-359-3249  
Fax 505-473-5637

Circle No. 38 on Readers' Service Card

## CUSTOM ANTIBODIES TO PEPTIDES & PROTEINS

Purification, Conjugation and ELISA Titration Available



HTI BIO-PRODUCTS, INC.

1 (800) 481-9737 OR (619) 788-9691 Fax (619) 788-9694

Circle No. 5 on Readers' Service Card

## KEYSTONE Laboratories, Inc.

The Complete  
Oligonucleotide  
Company

Oligonucleotides: \$2.30/base

Volume orders of 200 bases or more.

No set-up fee. Shipped in 24hrs.

Tel. 1-800-788-4DNA • Fax 1-800-786-4DNA

Circle No. 3 on Readers' Service Card

## MARKETPLACE

### World leader in Synthetic DNA and Peptides

**CUSTOM DNA**

- NO SETUP charge • NO minimum order
- \$1<sup>99</sup>** base
- Column Purified
- >5.0 OD's (~200 µg)
- Gel Picture Q. C.
- Synthesis Report

**CUSTOM PEPTIDES**

**! FREE MASS SPEC !**

- NO SETUP charge • Free HPLC Tracing
- \$20<sup>00\*</sup>** /res.
- 15-40 mgs
- 8 - 20 residues
- Shipped in 5 days

! Antipeptide Antibodies production services, & more !

Since 1984, serving you with quality products

**BIO-SYNTHESIS**

1-800-227-0627 Fax: 214-420-0442

Circle No. 15 on Readers' Service Card

## CUVETTES PLUS™

Low Cost, Disposable  
Electroporation Cuvettes  
Each individual sterile package includes  
a pipette for easy sample handling

**BTX** 1-800-289-2465  
FAX 619-597-9594

Circle No. 36 on Readers' Service Card

## HUMAN ENDOTHELIAL CELLS VENOUS, ARTERIAL, and MICROVASCULAR SYSTEMS

True pools of >50 donors, frozen @ <6 CPD *in vitro*,  
>500,000 cells, complete CS growth medium system  
characterized and tested for cytokine-stimulated leukocyte  
adherence, negative for HIV-1 DNA by PCR



800-697-1211

Circle No. 37 on Readers' Service Card

## ELISA TEST KITS

- Hormones
- Prostaglandins
- Leukotrienes
- Thromboxans
- Reagents
- Cyclic Nucleotides

ELISA Technologies

800 477 8201 USA 606 254 1221 606 255 5532 Fax

Circle No. 31 on Readers' Service Card

**Custom DNA**  
Purified & Delivered in 48 hours

**\$5.00 per base • Purified**  
**Guaranteed minimum 100µg**

**Research Genetics, Inc.**  
**1-800-533-4363**

Circle No. 2 on Readers' Service Card

# GENERELEASER

## PCR\* READY DNA IN 5 MINUTES

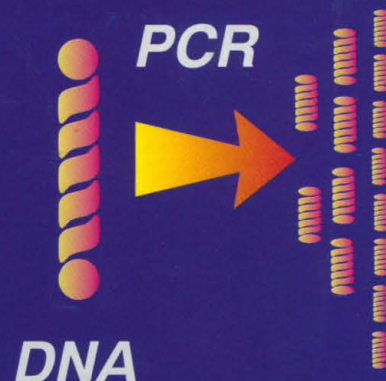
1993  
R&D  
100  
WINNER



**SAMPLE  
TYPES**



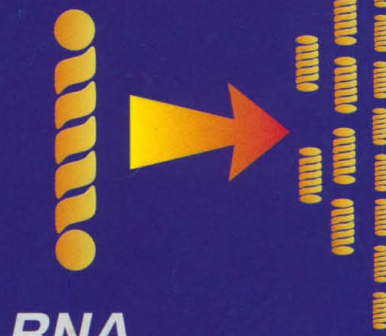
- \* FIVE MINUTE PROTOCOL
- \* MULTIPLE ASSAYS
- \* KITS NOW AVAILABLE



**DNA**

**PCR**

**RT-PCR**



**RNA**

IN ADDITION TO THE STOCK GENERELEASER REAGENT, KITS FOR DNA AND RNA PREPARATION FROM MOUSE TAILS, WHOLE TISSUES, YEASTS, PLANTS, AND PARAFFIN EMBEDDED TISSUES ARE AVAILABLE COMPLETE WITH PROTOCOLS, MICROWAVE RACK, DISPOSABLE PESTLES AND TUBES FOR 50 ASSAYS.

**CALL NOW FOR ONE OF THE MOST COST EFFECTIVE,  
INNOVATIVE SAMPLE PREPS AVAILABLE**

**BioVentures, Inc.**

Phone 800-235-8938 FAX 615-896-4837

AUSTRALIA: Integrated Sciences Pty. Ltd. (02) 436-2611 AUSTRIA: Vienna Lab (1) 740-40-190 BELGIUM: Eurogentec (41) 66 01 50 CANADA: General Synthesis & Diagnostics (416) 978-8805 & Kara-Tech (604) 264-8844  
CHINA: Jingmei Biotech 364-273 & T.W.C. BioSearch International (852) 699-6208 CZECH REPUBLIC: BioVendor sro (49) 69-6772127 FRANCE: ATGC Biotechnologie (1) 43 04 21 00 & Eurogentec (41) 66 01 50  
GERMANY: Angewandte Gentechnologie Systeme mbH (6221) 831023 & Eurogentec (41) 66 01 50 & Syntex-Vertriebsges mbH (69) 359686 or (6221) 161720 ISRAEL: Talron (8) 472563 ITALY: Polymed srl (55) 8071285  
JAPAN: Funakoshi (3) 5684-1622 KUWAIT: Boushahri Medtech 5729000 THE NETHERLANDS: Eurogentec (41) 66 01 50 NEW ZEALAND: Integrated Sciences Pty. Ltd. (02) 436-2611  
SOUTH AFRICA: Whitehead Scientific (21) 981-1560 SPAIN: Bio-Synthesis (1) 352-63-99 & C.E. Durviz sl (6) 347-6409 TAIWAN: Pro-Tech (2) 3810844 UNITED KINGDOM: Cambio 223-66500

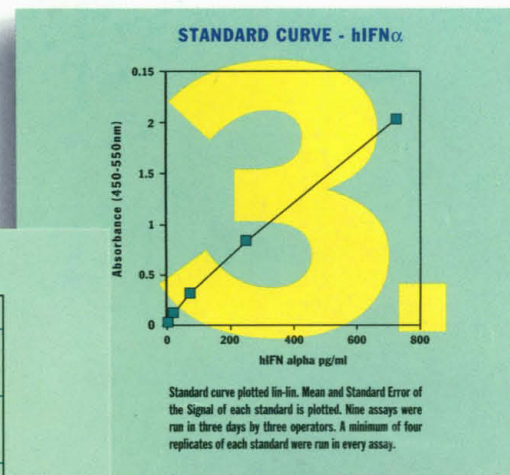
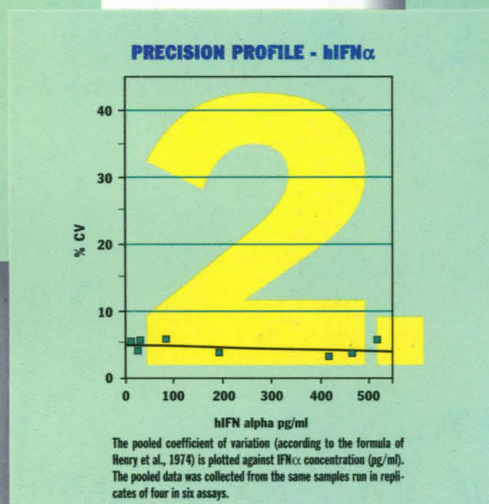
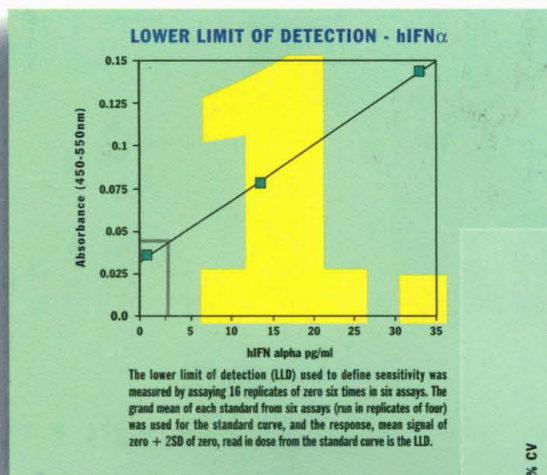
PCR IS COVERED BY PATENTS OWNED BY HOFFMANN-LA ROCHE

Circle No. 4 on Readers' Service Card



# Human IFN $\alpha$ ELISA.

## Validate your results 1, 2, 3.



## For cytokine results you can count on.

**New.** Endogen's human Interferon alpha ELISA has been developed to meet the rigorous and unique requirements for quantitation of this cytokine.

1. Sensitivity: < 2.5 pg/ml
2. C.V.s: < 10
3. Assay Range: 2.5 - 700 pg/ml
4. Calibrated to NIAID standards
5. Protocol: Rapid, User-friendly, 3 hours
6. Validated by FS-7 bioassay

**Sensitive.** High sensitivity, low background, excellent precision and the capability to detect various subtypes of IFN $\alpha$  are features you can count on.

**Tested.** This kit has been thoroughly tested in a variety of matrices including serum, plasma, urine and culture supernatants.

**NIAID compliant.** Endogen's IFN $\alpha$  is calibrated to National Institute of Allergy and Infectious Disease

OTHER CYTOKINE ELISAs	
HUMAN	MOUSE
•hIL-1 $\alpha$ new	•mIL-2
•hIL-1 $\beta$ new	•mIL-3
•hIL-2	•mIL-4
•hIL-4	•mIL-5
•hIL-6	•mIL-6
•hIL-8*	•mIL-10
•hIL-10	•mIFN $\gamma$
•hIFN $\gamma$	•mGM-CSF
•hGM-CSF	•mTNF $\alpha$
•hTNF $\alpha$	
•hTNF $\beta$ *	
CELL ADHESION ELISAs	
•hslCAM-1*	•hsTNFR*
•hsELAM-1*	•msICAM-1

\* Distributed in the U.S. for Bender + Co. GmbH

reference standard  
#Ga23-901-532.

**Accurate.** For accuracy in cytokine quantitation, validate your results with Endogen.

Call us today at  
800-487-4885.

640 MEMORIAL DRIVE, CAMBRIDGE, MA 02139 USA 617.225.0055 FAX 617.225.2040  
For research use only. Not for use in diagnostic or therapeutic procedures.

Head Office for Europe Biozol Diagnostica  
TEL 49+(89) 3192053  
FAX 49+(89) 3193611

In Japan Funakoshi Co., Ltd.  
TEL 81+(3) 56841622  
FAX 81+(3) 56841633

Circle No. 25 on Readers' Service Card

**ENDOGEN**  
800-487-4885