

ROCK SOLID RESULTS

GENECLEAN®. The name is carved in stone. In 1986 BIO 101 introduced the ORIGINAL GENECLEAN process and DNA purification techniques changed forever. The GENECLEAN Kit entered a market that was flooded with research ideas, but short on time. GENECLEAN quickly became the standard terminology and protocol for DNA purification from gels and solutions.

The GENECLEAN Kit offers economical speed, simplicity, and a consistent, guaranteed yield. GENECLEAN is the leader in nucleic acid purification.



Much like BIO 101, the GENECLEAN purification system has grown.

- MERMAID®, a GENECLEAN Family member purifies low molecular weight DNA (10 bp to 250 bp), and PCR primers from gels or solutions.
- RNaid® purifies RNA from gels and solutions in minutes.
- RNaid® PLUS allows for rapid isolation and purification from tissues, cells, gels, and solutions.

During the growth, however, one thing remained constant. BIO 101's commitment to nucleic acid purification and guaranteed yields set the standard of excellence for the industry.

GENECLEAN will soon be available in three convenient sizes, all containing TBE modifier. The GENECLEAN Family includes: GENECLEAN, MERMAID, RNaid, and RNaid PLUS.

DOMESTIC DISTRIBUTORS:

BT Scitech Tel: (619) 591-7881, Fax: (619) 591-3115 • **Intermountain Scientific** Tel: (800) 999-2901, Fax: (801) 547-5051 • **Midwest Scientific** Tel: (800) 227-9997, Fax: (314) 984-9983 • **PGC Scientific** Tel: (800) 424-3300, Fax: (301) 990-0740 • **Research Products International** Tel: (800) 323-9814, Fax: (708) 635-1177 • **Scientific Resources Inc.** Tel: (612) 777-7390, Fax: (612) 777-8007 • **SUN BIOScience, Inc.** Tel: (203) 481-8858, Fax: (203) 483-7722 • **TKR Biotech Products** Tel: (800) 377-7900, Fax: (215) 957-9811

INTERNATIONAL DISTRIBUTORS:

Australia • Integrated Sciences Tel: (2) 436-2611, Fax: (2) 436-4442 • **Austria** • Bio-Trade Tel: (1) 889 18 19, Fax: (1) 889 18 19 20 • **Benelux** • Westburg B.V. Tel: (33) 950094, Fax: (33) 951222 • **Canada** • Bio/Can Scientific Tel: (416) 828-2455, Fax: (416) 828-9422 • **France** • Ozyme Tel: (1) 34 60 24 24, Fax: (1) 34 60 92 12 • **Germany** • Dianova G.m.b.H. Tel: (40) 32 30 74, Fax: (40) 32 21 90 • **Italy** • Stepbio s.r.l. Tel: (51) 63 43 340, Fax: (51) 63 43 332 • **Dasit S.p.A.** Tel: (2) 9027381, Fax: (2) 90360640 • **Japan** • Funakoshi Co., Ltd. Tel: (3) 5684-1622, Fax: (3) 5684-1633 • **Korea** • Bio-Medical & Science Co. Tel: (2) 569 6902, Fax: (2) 553 9670 • **Mexico** • Bioelec Tel: (525) 341 7764, Fax (525) 341 7403 • **Singapore** • TIBS Trading PTE Ltd. Tel: (65) 2929783, Fax: (65) 2932517 • **Scandinavia** • Kebo Lab Tel: (8) 621 34 00, Fax: (8) 621 34 70 • **Switzerland** • Lucerna Chem AG Tel: (41) 36 96 36, Fax: (41) 36 96 56 • **Taiwan** • Cold Spring Biotechnology Co. Ltd. Tel: (2) 694 0066, Fax: (2) 694 3204 • **United Kingdom** • Stratech Scientific, Ltd. Tel: (582) 481884, Fax: (582) 481895



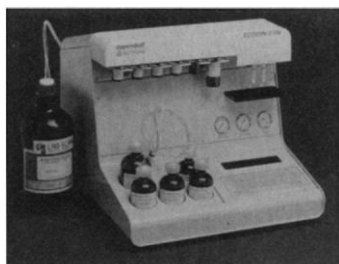
"Check with BIO 101...
We have your time in mind!"

1070 Joshua Way, Vista, CA 92083
619-598-7299 • Fax: 619-598-0116
Internet Mail: BIO101@BIOTECHNET.COM

**Call us to find out why GENECLEAN is
the leader in nucleic acid purification
800-424-6101 Ext. 20**

DNA Lab

The DNA Lab is a package that consists of an Eppendorf ECO-SYN D-100 DNA/RNA Synthesizer, an Eppendorf Heater Shaker thermal block, and a Labconco



sample concentrator. DNA or RNA oligomers are easily synthesized on the model D-100, followed by rapid deprotection at elevated temperatures using the Heater Shaker. The deprotection solution is then evaporated using the sample concentrator. **Eppendorf North America. Circle 139.**

Detergent-Compatible Protein Assay

With the DC Protein Assay, protein samples solubilized in up to 10% SDS (or 1% of most other detergents) can be analyzed in as little as 15 min. A proprietary modification of the well-known Lowry protein assay, it eliminates timed, multi-step additions of reagents. The resulting absorbance is stable for up to 2 hours, which means that in spite of inevitable interruptions, protein determinations are accurate from the first to the last sample. **Bio-Rad Laboratories. Circle 140.**

DNA Extractor Kit

The DNA Extractor WB Kit for DNA purification after the lysis of cells features sodium iodide as a chaotropic agent. The procedure avoids hazardous processes such as phenol or chloroform extraction and inefficient procedures such as a lengthy dialysis and transfer of DNA from one tube to another. Extraction is done through several brief cen-

trifugations from a single microfuge tube. The DNA extracted is suitable for several applications, including restriction enzyme digestion, Southern blot analysis, and polymerase chain reaction amplification. The kit can be used with 100 to 1000 µl of whole blood by proportionally varying the volumes of solutions used. **Wako BioProducts. Circle 141.**

Peptide Software

Peptide Companion software is designed for chemists working with peptides, peptidomimetics, and proteins. It is capable of handling polynucleotides, carbohydrates, and any organic molecules composed of defined subunits. It calculates molecular weights and results of elemental analysis, which can be corrected for various additional molecules presented in lyophilized products. It evaluates amino acid composition and predicts mass spectral fragmentation of the given peptide or peptidomimetic. The program also serves as a database of hundreds of peptide structures and protecting groups. **CSPS. Circle 142.**

DNA Binding Protein Isolation

Dynabeads M-280 Streptavidin allows for the purification of low abundance, unstable, sequence-specific DNA binding proteins in less than 30 min by eliminating multiple adsorption steps and time-consuming column chromatography. Highly purified proteins are obtained in one adsorption step. A biotinylated DNA fragment specific for the protein of interest is immobilized onto the Dynabeads. The resulting magnetic DNA affinity beads bind the target protein, in the presence of competitor DNA, with a kinetic

similar to that of DNA in free solution. Magnetic separation and elution of sequence-specific DNA binding proteins is completed in minutes. **Dynal. Circle 143.**

RNA Purification Kit

The Rapid RNA Purification Kit yields total RNA from up to 100 mg of tissue in about 30 min. RNA isolated by this method is pure enough to use for Northern blotting and hybridization, mRNA purification, reverse transcription, reverse transcriptase polymerase chain reaction, and RNase protection assay. Yields are comparable to those obtained with guanidine and phenol methods. Both proteins and genomic DNA are removed, without the use of phenol, guanidines, resins, or glass beads. **AMRESCO. Circle 144.**

Chromatography System

The Waters 626 LC System supports a wide range of liquid chromatography applications, including high-resolution protein purification, microbore peptide mapping, nucleic acid isolation, and



oligosaccharide purification and analysis. It combines advanced polymeric technology and low dispersion system volume in a single liquid chromatograph and

provides the highest level of performance available in a nonmetallic system. **Millipore. Circle 145.**

RNase Detection Kit

This kit to detect RNase in reagents or laboratory devices can reveal contamination that can inhibit RNA experiments. An RNase and DNase detection service is also offered. **Mo Bio Laboratories. Circle 146.**

Literature

The seventh edition of the *ATCC/NIH Repository Catalogue of Human and Mouse DNA Probes and Libraries* lists probes and cloned genes for human and murine loci, oligonucleotides, human chromosome-specific genomic libraries, cDNA and genomic libraries, oncogene/transforming protein probes and clones, selected probes detecting polymorphism, bacterial hosts for transformation or plating libraries, and human brain cDNA clones. It includes literature citations and information on handling cultures. **American Type Culture Collection. Circle 147.**

ECL Highlights is a technical newsletter on new products and methods in enhanced chemiluminescence technology. **Amersham International. Circle 148.**

1994 Endogen Catalog features more than 150 reagents and enzyme-linked immunosorbent assay (ELISA) kits for immunological research. Products include human and murine cytokines, cytokine ELISA kits, antibodies to human and murine cytokines, and cell surface markers. **Endogen. Circle 149.**

Spectrophotometer Cells lists more than 300 types of cells, both standard cells and special cells that include anaerobic cells, micro cells, water-jacketed cells, and dye laser cells. **NSG Precision Cells. 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.

Careers in Biotechnology and Pharmaceuticals:

West Coast

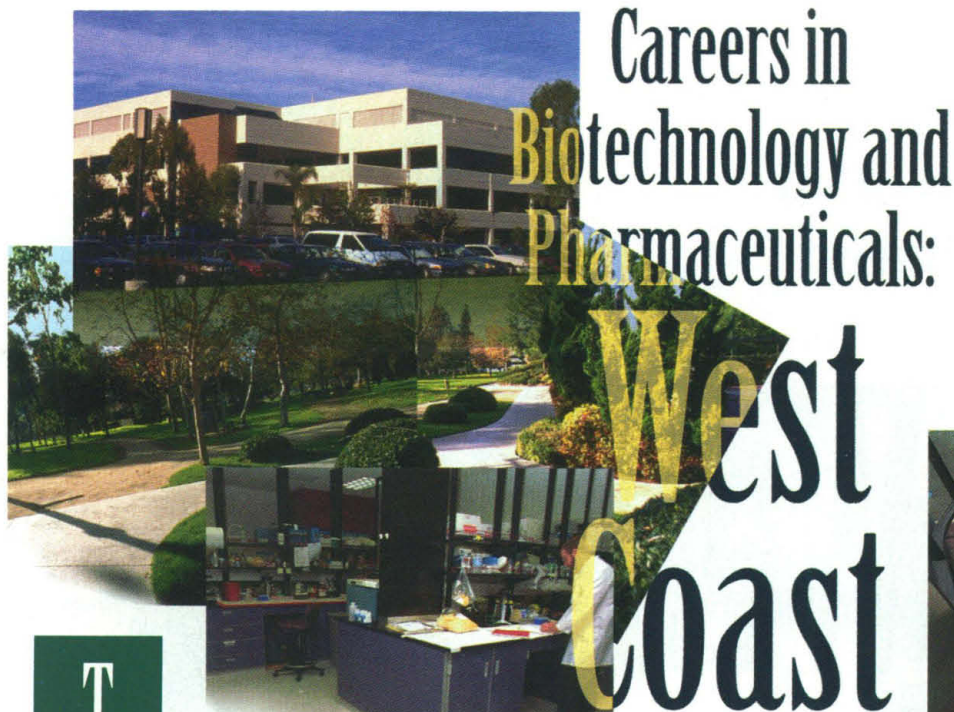
by John Timpane

The notion of the frontier has dominated the American imagination since there was an America. California, Texas, and the rest of the

western states are no longer frontiers in the old sense, pristine Shangri-La's where you move to get away: they are established

economic giants in their own rights and have been for generations already. Yet Americans still consider the West a frontier, a place that is new and different.





The question is: Are career opportunities in life science really new and different west of the Mississippi? Below, we survey the job market in western biotechnology and pharmaceuticals. En route, we will hear from scientists who work in these industries, some in research, others in clinical, regulatory, process development, and the other wings of the modern life-science company. Ours is a tale about the West, about what is, if not the final frontier, at least the latest.

A MATTER OF HISTORY

In the East, particularly between Philadelphia and New York City, are many of the oldest pharmaceutical firms in the country: Merck, Sharp & Dohme, SmithKline Beecham, Pfizer, Shering-Plough, Warner-Lambert, Johnson & Johnson, Hoffmann-La Roche, and many others. Biotech is there, too, clustering near Cambridge, Massachusetts; New York; Philadelphia; Washington, D.C.; and the Research Triangle in North Carolina.

In the West, by contrast, biotech predominates.

California alone has three of the top 10 centers for biotechnology research: San Diego, Orange County/Los Angeles, and the San Francisco Bay Area, AKA the Bethlehem of Biotech, home to fully 15 percent of all the 1,272 biotech companies in America. Important centers flourish in Texas, Seattle, and Colorado. There are, however, exactly two Fortune 500 pharmaceutical companies out west. Traditional pharmaceutical companies—Syntex in Palo Alto, California; Allergan in Irvine—tend to be smaller and newer than their eastern counterparts.

WHAT'S DIFFERENT ABOUT THE WEST?

"We have better coffee than the rest of the US," says Doug Williams, vice president of research and development at Immunex. "Companies in the East are a lot closer to Washington, D.C.," says Jerry Caulder, CEO of Mycogen Corporation. Seriously, most scientists appear to believe there is a difference, albeit neither quantifiable nor empirically testable. Call it a cultural environment that supports the relaxed intensity necessary for good science. Judy Batlin, associate director

of human resources for Berlex Biosciences, says, "The West is more progressive, more forward-thinking. Innovation is pushed faster here. We're raised to be thinking 'what's next' before the next thing even comes."

THE VIEW FROM CAULDER

Jerry Caulder is chairman, president, and CEO of Mycogen, a Top 20 company in San Diego specializing in agricultural biotechnology. Well known as an industry leader, visionary, and outspoken pundit on the industry's present and future, Caulder traces the western biotech boom to an entrepreneurial climate, a beautiful friendship between industry and the university system, and a support system of far-sighted bankers and investors.

"Intellectual property rights are the grist for this biotech mill," he says. "That's what drives it, that's what it's got to sell. And there has been a uniquely close relationship for a long time between industry and the university system on this coast. You've got the UC system, with Berkeley, Davis, UCSF, Irvine, UCSD. You've got Stanford, USC. We have in place a great tradition in first-line science."

"Biotech was a natural

extension of the venture capital invested in Silicon Valley. A legal framework grew up around that: the Boyer-Cohen patent started it all. By now, you've got a banking system that understands the value of intellectual property—and it's difficult to find investment bankers with the same vision in the Midwest!"

What does a job-seeker need to be part of the western scene? "Three things are the most important: attitude, attitude, and attitude," Caulder says. "The trick is to switch from being a self-driven original thinker in academe to becoming part of a team in industry. That is where attitude comes in."

Being a CEO has not distanced Caulder from the hiring process. On the contrary: "I'm very much involved in our hiring. The most important job a CEO has is to make sure you're bringing in the very best people." As master hirer, Caulder looks for the latest skills, but needs change as biotech changes. "A lot of things it took a postdoc to do 10 years ago, a high-school kid can do now with a kit. The basic skills are being reduced more and more to a technician-level work. What you look for are skills that will help you in the coming years. That's why, on a skills level, employment needs can be very company-specific. I'd advise job-seekers to research companies they're interested in. Try to find out not only what



they're doing now but also what they want to be doing in five or 10 years."

Caulder does see some industrywide trends. Discovery researchers are still the bricks and mortar of the business. But other scientists are needed to carry good science through the production process. "As biotech matures, there will be a big demand—there's a big demand now—for fermentation engineers and microbiologists who know the production end. As R&D moves toward development and production, these people will be in demand, and in short supply for a while to come."

WHAT TO KNOW ABOUT BIOTECH

Despite its good and ubiquitous press, biotech is still small. Most companies have fewer than 50 employees. Lumped together, biotech sales in the United States made, depending on how and what you count, between \$7-\$10 billion last year. Merck, Sharp & Dohme, by comparison, made \$9.06 billion during the same period—but Merck made a profit of \$2.5 billion, while biotech lost \$3.6 billion.

That brings up a second consideration. Biotech involves risk. Biotech job-seekers "shouldn't be too risk-averse," according to those we interviewed. This industry lives on the edge to some extent. In its annual survey of the biotech industry, the accounting firm of Ernst & Young reports that 58 percent of biotech firms have less than two years' worth of working capital. That's risky—but then, by definition, the new biology is an experiment with the future. For the job seeker, that experiment may involve moving to new projects, new departments, new companies, new careers, as science and industry transform.

Even so, biotech is the fastest-growing major sector of the high-tech industries in the United States. In terms of new product approvals, 1993 was biotech's best, with seven. According to Ernst & Young, a total of 27 biotherapeutics have now been approved, and the top public companies have over 270 products in human clinical development, with an estimated 2,000 in some early stage. Ag biotech is coming to field and table at last. Three new biopesticides—Crop Genetics's Spod-X® bioinsecticide, Eco Science's BioPath®,

and Mycogen's M-Peril®—were approved, and soon we'll all know whether Calgene's Flavr-Savr® tomato has that real backyard taste. Bioremediation will—must—become the need of the future, with a \$350-\$500 million US market forecast by the year 2000.

Job-seekers should research their target companies, determine how mature those companies are, and match those facts with their own skills. Writing for Ernst & Young, Denise M.

Gilbert, vice president and CFO of Affymax N.V., classifies biotech companies into three tiers. First-tier companies have been around for more than 10 years and are marketing products, making profits, and stuffing the pipeline. There are only a handful of those. They will need scientists from the beginning of the process

(discovery research) to the end (sales).

Second-tier companies are somewhat younger and are two or three years away from marketing a product. You might find ten of those. They will need people up and down the line, for though they may not have a product yet, they will soon. Then there are the rest, less than five years old, still in preclinical animal or Phase I human trials, expecting to have a product before the millennium. There are many of those. They need the discoverers and managers who make up the body and soul of the future. At a smaller company, the researcher will be asked to do many different things, hold this wrench, write this patent, make this presentation, call out for pizza. Such is the world of 99 percent of all biotech companies: a Wild West of sometimes quite idiosyncratic, always intense, ever-excellent ad hocery.

COMPANY TIER A:

If Your Target Company Is:

Already marketing products
Already realizing profits
Filling its pipeline

They probably need:

Managers
Researchers/Assistants
Product Development
Process Development
Regulatory
Patent Law
Clinical Research
QA/QC
Facilities/Safety
Marketing/Sales
Distribution

COMPANY TIER B:

If Your Target Company Is:

In Phase II-III trials
Awaiting human data or FDA approval in 6-12 months
Planning to market product in 2-3 years

They probably need:

Managers
Researchers/Assistants
Regulatory
Clinical Research
Product Development
Marketing

COMPANY TIER C:

If Your Target Company Is:

Less than 5 years old
Still in preclinical animal trials or Phase I human trials
Planning to market product in 4-5 years

They probably need:

Researchers/Assistants
Regulatory
Clinical Researchers
Patent Law

Relating your target company's maturity to their employment needs



Source: Ernst & Young annual report

TOP 50 PHARMACEUTICAL COMPANIES IN THE WEST

- 29 Syntex
Palo Alto, CA
- 39 Amgen
Thousand Oaks, CA
- 45 ICN Pharmaceuticals Inc.
Costa Mesa, CA
- 46 Genentech
South San Francisco, CA
- 50 Chiron Corp.
Emeryville, CA

Source: Medical Advertising News

TOP 20 BIOTECH COMPANIES IN THE WEST

- 1 Amgen
Thousand Oaks, CA
- 2 Genentech
South San Francisco, CA
- 3 Chiron Corp.
Emeryville, CA
- 8 Immunex Corp.
Seattle, WA
- 9 Synergen Inc.
Boulder, CO
- 11 Gensia Pharmaceuticals
San Diego, CA
- 14 Scios Nova
Mountain View, CA
- 17 Carrington Laboratories Inc.
Irving, TX

Source: Medical Advertising News

OUTSTANDING SCIENCE IS OUR CULTURE

Genentech's commitment to science is a critical component to our success in the biotechnology industry. Our leadership position and rich product pipeline create opportunities for dedicated professionals. We encourage our scientists to pursue independent research interests and collaborations, as well as the opportunity to publish their findings.

Analytical Chemistry Department

Our Analytical Chemistry Department is currently seeking two Chemists. This department is responsible for the detailed structural characterization of novel therapeutic proteins, glycoproteins and peptides. We also evaluate new applications of modern analytical technologies.

Carbohydrate/Glycoprotein Chemist

You'll determine carbohydrate structures of glycoproteins and glycopeptides in support of regulatory submissions. You will also manage a lab with an emphasis on developing and evaluating methods for glycoprotein structural analysis. Requires experience with carbohydrate

analytical methods including high pH anion exchange methods, glycosyl linkage analysis, oligosaccharide release, mass spectrometry and/or NMR. Requires a Ph.D. in Biochemistry, Chemistry or related field, and a minimum of 1 year post-doctoral training or industry experience. Job Code: NS-TW.

Analytical Biochemist

You'll determine the primary and secondary structures of proteins and peptides in support of regulatory submissions. You will also manage a lab with an emphasis on developing and evaluating methods for protein structural analysis. Knowledge of protein analytical methods including capillary zone electrophoresis, rpHPLC, ion exchange chromatography and/or hydrophobic interaction chromatography is essential. Familiarity with methods of detection, such as mass spectrometry, fluorescence or UV spectroscopy is required. Requires a Ph.D. or equivalent in Biochemistry, Chemistry or related field, and a minimum of 1 year post-doctoral training or industry experience. Job Code: NS-RH.

Biological Chemistry Department

Join our Biological Chemistry Department which is currently seeking five Scientists. This department provides biological and immunological product characterization for Research and Development by generating novel assays, reagents, cell lines and animal models.

Hybridoma Scientist

This is primarily a lab position requiring project team involvement and external collaborations. Requires a Ph.D. in Molecular Biology, Immunology or Biochemistry and 2+ years' experience in mammalian cell culture, immunoassay development or protein chemistry. Job Code: NS-BF1.

Bioassay Scientist

Requires a Ph.D. in Cell Biology, Immunology or Molecular Biology with 2+ years' post-doctoral training. The successful candidate will be a bench scientist with expertise in bioassay development, implementation, and new assay technologies. Experience in the areas of receptor/ligand interactions, signal transduction, molecular biology and flow cytometry preferred. Job Code: NS-BF2.

The following scientists will develop analytical and quantitative biological methods to investigate the mechanism

or action, biological function and characterization of recombinant proteins.

Cellular Immunologist

Requires a Ph.D. with post-doctoral training and 3+ years' experience in cell function including FACS assays and antibody analysis. Management experience required. Relevant clinical research experience desired. Job Code: NS-SK1.

Molecular Biologist

Requires a Ph.D. with post-doctoral training, and experience in nucleic acid assay development. Infectious disease expertise desired. Job Code: NS-SK2.

Cytokine Biology Scientist

Requires a Ph.D. in Cell Biology, Immunology or Biochemistry with post-doctoral training and experience in bio/analytical assay development and mechanisms of action. Job Code: NS-SK3.

Genentech offers an excellent salary and benefits package which includes child care facilities, free health club membership and fully paid medical/dental/vision coverage. For immediate consideration, please send your resume indicating Job Code of interest, to Genentech, Inc., Human Resources, 460 Point San Bruno Blvd., South San Francisco, CA 94080. We actively support and promote affirmative action and equal opportunity employment. Women and minorities are encouraged to apply.

Genentech, Inc.



In science, sometimes thinking small is thinking big.

LIGAND Pharmaceuticals is developing new classes of proprietary receptor-

based, small molecule drugs. LIGAND's strong proprietary position in Intracellular Receptor (IR) technology and clear focus on small molecule drugs have led us to novel and clinically important discoveries, as well as exclusive collaborative agreements with academic institutions and strategic partnerships with major pharmaceutical companies.

This unique and powerful network has allowed us to unite nearly 300 scientists to exploit IR and signal transduction technology, including more than 50 Ph.D.s and M.D.s at LIGAND.

Our big thinking has attracted the attention of some of the most talented people working in science today. With growth occurring in the areas listed below, we invite you to consider joining LIGAND scientists — thinking big things about small molecules.

New Leads Discovery • Regulatory Affairs
Cell and Molecular Biology • Biochemistry
Medicinal Chemistry • Drug Metabolism
Pharmacology • Clinical Development
Formulations and Analytical Development

Our environment is designed to promote excellence in research and development along with professional growth and satisfaction.

LIGAND's highly competitive compensation package includes salaries commensurate with education and experience, and stock options. San Diego continues to gain recognition as a leading center for biomedical, biopharmaceutical and biotechnology development.

Please write to us with your c.v. and a letter stating your area of expertise. LIGAND Pharmaceuticals Inc., Attn: WCSCI, 9393 Towne Centre Drive, San Diego, CA 92121. We encourage diversity in our workforce/EOE.



**SMALL MOLECULES
REQUIRE
BIG THINKING.**



LIGAND
PHARMACEUTICALS

Easternmost In Quality, Westernmost In Flavor: Science At Allergan

Allergan is as Californian a company as could be—yet it's in traditional pharmaceuticals rather than biotech. Compared to its giant East Coast brethren, Allergan is fairly new (founded in Los Angeles in 1948 and at its present headquarters in Irvine since 1968) and fairly small (sales of \$960 million in 1992, compared to \$15.6 billion for, say, Johnson & Johnson)—but next to most life-science companies in Orange County (average age, 10 years), it is hoary-headed and substantial.

As Tom Burnham, vice president of human resources, puts it, "We're big enough to have the excitement of a big business and still small enough to stay informal." Larry Wheeler, vice president of biological sciences, says, "We're relatively younger, smaller, more entrepreneurial than the big East Coast guys." It's both a family business and a business of shareholders, with the pedigree of a pharmaceutical firm and the forward-looking excitement of a biotech company.

Allergan focuses on ophthalmological, dermatological, and neuromuscular products in its pharmaceutical line, along with a thriving over-the-counter optical products business. Having grown up along with the town of Irvine and its University of California campus, Allergan has gone from being the new (meaning only) kid on the block to being the oldest kid. "Now we're competing head-to-head with biotech companies for the best people," says Michael Garst, vice president of chemical sciences.

And what's life like at Allergan? Steve Munk, senior scientist in the department of medicinal chemistry, says that he never realized "how broad-reaching chemistry can be" until he came to Allergan. He definitely likes the way team science works. "We have a team concept here. The biologists can help me decide what to target in my research, and I have some input in the way they direct their biological projects. I've had the enjoyable opportunity of learning a lot of biology, and I'm a better, broader chemist for it."

Munk, an organic chemist, spends about half his time in the lab, conducting organic reactions using standard techniques. At least once a week he sits down with his peers in biological sciences, "talking about data, about structure-activity relationships, about which biological tests are to be conducted on which compounds." He also meets with his chemistry peers to tackle



Inc. of San Diego. Allergan knows retinoid biology, and Ligand knows receptors. "Larger firms really represent a big opportunity for smaller firms to research, develop, and market their products," says Burnham. "You'll see a lot more of that in the future, a revolutionary, tighter

problems in his chosen field.

His advice to those who would work as he does: "Get in the lab and conduct research as fast as you can." He says that, especially in organic chemistry, it's hard to find scientists with good hands-on synthesis experience. "We're looking for some level of experience with chromatography, spectrometry—these are basic skills in which experience really counts."

Chemistry and biology have a continual conversation at Allergan. Gerald W. DeVries is a research investigator in the department of biological sciences; his expertise is in nucleotide metabolism in ocular tissues. When he started, he had one technician and was spending 80 percent of his time in the lab. "Now I have a technical staff of five, and my primary responsibility is directing research, overseeing experimental design, and reviewing data." DeVries and his staff are involved in cell culture work, isolation of human leukocytes, in vitro pharmacology, and identifying receptors and related agonists and antagonists.



Allergan's finest: Larry Wheeler (above, left), Michael Garst (above, right), Steve Munk and Gerald W. DeVries (left)

DeVries says that as a graduate student, he had not anticipated the "delightful surprise" of having to hobnob across disciplinary lines with other scientists throughout the company. "It means that communication skills are fundamental. You're constantly selling your ideas to people, whether in informal discussions, in presentations, or in writing submission documents or grant proposals."

As a small large company, Allergan can stay flexible and creative in the new health care environment, always looking for new opportunities for joint research and joint marketing. A case in point is a recent \$30 million joint venture in retinoid research with Ligand Pharmaceuticals,

alliance between pharmaceutical firms and biotech."

Joyce Smith, senior recruiter, says, "One of the advantages we can definitely pitch to our job-seekers is location. We offer the attractions of a smaller company where you can play a role and be recognized. Here you can grow into a position of real responsibility in a growing company that's not so large that it swallows you up."

Who are they looking for? "Our key areas right now," says Burnham, "include the regulatory area and biostatistics. We have a continuing series of vacancies in the standard sciences: biology, analytical and synthetic chemists, and pharmacology. But regulatory is critical right now. It's going to be a hugely influential area as FDA requirements need to be met."

Pharmacologists are a traditional and continuing need. Biochemists are needed to help purify receptors. Molecular biologists are also in demand. Wheeler says, "One of the biggest changes in the last five years is molecular biology finally

having an impact in designing better tools for drug discovery."

As more cloned receptors become available, the art of identifying receptor subtypes and exploiting their medicinal benefits becomes more and more sophisticated. "The drug discovery effort draws on a lot of different skill

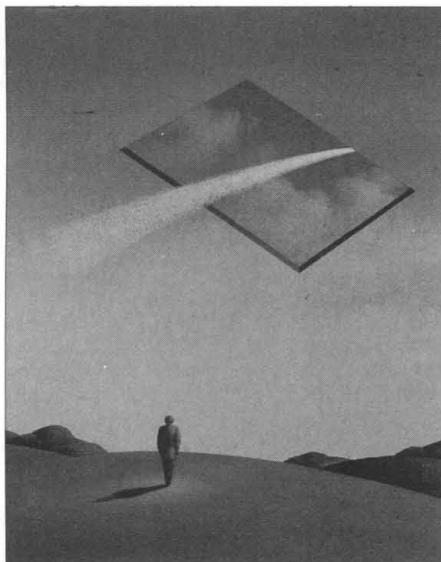
bases, more than ever before," Wheeler says.

Scientists are also needed in regulatory and clinical affairs. "More and more, we need the PhD in science who can communicate with the MDs in the clinical centers and can help set up and design protocols that will be adequate for FDA requirements," says Smith. "Preclinical is another area: there, we need pathologists, toxicologists, and pharmacologists to help with in vitro and in vivo testing of compounds prior to human testing."

Judy Spielberg, senior recruiter, says, "There is a range of jobs for scientists who don't want to be on the bench. These areas include manufacturing, quality control and quality assurance, and pilot

IN IT FOR LIFE.

Good science is born of creative freedom.



PRECLINICAL RESEARCH

Staff Scientist

Investigate immunologic activities and sources of an exciting new cytokine: IL-12. The ideal candidate will have a PhD with at least 2 years' postdoctoral training, a strong background in cellular immunology, and experience with molecular biology techniques such as cloning, PCR, RNase protection and northern analysis. Additionally, candidates must be team-oriented. **Job Code: 94-C559-S.**

Staff Scientist

Investigate the biology and *in vivo* function of proteins under development. Should have experience in molecular biology techniques such as cDNA cloning, vector construction, PCR, and RNA analysis. A PhD degree in Biology or related field, at least 2 years' postdoctoral experience, and familiarity with basic protein analysis and cell culture techniques required. Experience with animal models of expression desirable. **Job Code: 94-C530-S.**

Toxicology

We seek an experienced individual to plan, initiate and monitor safety studies of key product candidates with outside contract facilities. Responsibilities involve developing an internal laboratory group to provide special toxicology evaluations of drug candidates. Candidates must have 3-5 years' industrial/academic experience evaluating toxicology profiles of drug products. Background with GLP procedures is required. Board Certification in Toxicology (DBAT) and experience with cellular toxicology preferred. **Job Code: 94-C532-S.**

At Genetics Institute, we provide a work environment which many have described as entrepreneurial. Ideas flow freely, open discussion is encouraged. We attract top people, and provide them with the kind of culture that keeps them here. All this we do, because good science leads to good products. And when we give our people the room to improve science, we can truly improve lives.

POSTDOCTORAL POSITIONS

Preclinical Molecular and Cellular Biology

The focus of this group is to study the biology and function of molecules under development at GI and to expand potential therapeutic uses. We are seeking a PhD to perform structure/function studies of IL-12 and interaction with its receptor. The successful applicant will have extensive experience in molecular biology techniques including site specific mutagenesis, library constructions and screening, and northern and southern analysis as well as experience in cell culture and protein analysis. A background in immunology is also desirable. Research efforts in this area are supported by extensive *in vitro* and *in vivo* research at GI on IL-12 biology, protein structure and expression. **Job Code: 94-C563-S.**

Embryonic Growth and Regulatory Proteins (2 positions)

The group is focused on understanding and discovering the molecular basis of organogenesis in embryonic development and organ neogenesis in adult animals. Multiple experimental strategies such as organ culture, gene expression, histology, transgenic animal models and differential cDNA library screens are being used to investigate the molecular basis of epithelial-mesenchyme interactions involved in the formation of parenchymal organs such as the pancreas and in mapping the cell lineage relationships of the differentiated end cells of the mature organ.

The positions provide the opportunity for a recent MD or PhD graduate to pursue independent basic publishable research in pancreas organogenesis, development and biology. The ideal candidate would have research experience and interest in any of the following: molecular genetics, transcription factors, molecular biology, development biology or endocrinology. Candidates with experience with the developmental biology of systems such as *Drosophila*, *C. Elegans* or chickens are encouraged to apply. **Job Codes: 94-C564-S/94-C565-S.**

Please forward your resume, specifying position of interest and corresponding job code, to Human Resources Department, Genetics Institute, Inc., 87 CambridgePark Drive, Cambridge, MA 02140. Genetics Institute is dedicated to building strength through diversity.

GENETICS



INSTITUTE®

Harnessing the Body's Power to Heal™

plant management. We hire many master's-level scientists in these areas, and business experience (MBA's), is even more valuable here than in research."

"We're looking for traditional synthetic chemists here," says Garst. "We're not doing nucleotide or peptide synthesis; we're still making our own compounds, and we want the very best we can get. We can't afford to have the people who are just good chemists. We need people who can learn fairly quickly to communicate chemistry to other chemists and to non-chemists."

Non-PhD scientists also form an important part of Allergan's troops. "We hire bachelor's- and master's-level people in a variety of backgrounds," Spielberg says.

"Lab experience is a must, as are good references and, in the case of BS candidates, at least a 3.0 GPA in the major field." BS people often work at Allergan for a few years while deciding on the next step in their career. The company assists with tuition if employees wish to get more schooling.

Smith and Spielberg have this advice for the BS-level scientist: Get summer internships or lab work. Gain as much business experience as you can, either in courses or on the job. Work on your oral and written skills (please). Attend job fairs and investigate companies you're interested in. Get to know your professors. "And above all, stay flexible," Spielberg says. "Flexibility is an absolute must in any business in the '90s, not just science."

Berlex: True Biopharm

"We really want to get away from the biotech/pharmaceutical distinction. We want a blend." So says Judy Batlin, associate director of human resources of Berlex Biosciences, a company focusing on multiple sclerosis, oncology, and cardiovascular disease. Berlex Biosciences is exploring ways to merge biotech and the traditional pharmaceutical sciences. "At first, creating that bridge can be rocky," Batlin says. "Many of our biotech scientists have never worked with traditional scientists—but once the process picks up momentum, great stuff happens."

Allan Rudzik, president of Berlex Biosciences, says, "I see the next decade as the golden age of pharmaceuticals—a bringing together of biotechnology and the more traditional approaches. The companies most successful in meshing these two are going to be at the forefront of the industry. Here, we find that many of our most promising projects begin with molecular biology and end with peptide mimetics, so that blend of skills is important."

Phyllis Ponte, scientist in the department of cell biology, says, "This is where I want to be. I decided to go into industry because I felt I would actually be less distracted from doing the actual hands-on science—rather than more, as is the belief in academe. And my work here has borne that decision out."

Team science is a hallmark of the Berlex approach. "You have groups of people with a wide range of skills, traditional chemists working next to cell biologists, all making a coherent effort toward the development of a new drug," Ponte says. "It's really great working with the traditional chemists. Not every new product is going to be a recombinant product, after all."

Ponte advises job-seekers to heed the words of Joseph Campbell and follow their bliss. "The product of academic science is knowledge; the product of industrial science is a drug. If you're really motivated by using science to produce a concrete product with real social value, then you'll be happy here. You have to lose your ego a little bit to be in a team-oriented, interactive environment. But the rewards are worth it."

Batlin speaks of the "need to find business scientists—those who can see the bigger picture of industry today." They must be able to thrive in the new "virtual organization," in which relationships between groups, managers, and outside collaborators are very fluid and the successful career extremely flexible. "Our greatest hiring need is still in research—molecular biology, cell biology, and biophysical chemistry. We also look for people in process development, marketing, and market research."



Much Joy In Emeryville: The Good Work At Chiron

Chiron Corporation is located in Emeryville, once the least prepossessing tract of land between Berkeley and Oakland. Now Emeryville is home to the number three biotech company in the United States. Formed by scientists in 1981, Chiron has prospered through scientific innovation as well as strategic partnerships. Chiron first came to prominence when Recombivax-HB®, its hepatitis B vaccine, was approved by the FDA in 1986; the vaccine is marketed by Merck & Co. In 1987 Chiron researchers were the first to identify and clone the hepatitis C virus, and in 1992 Chiron agreed to market Proleukin®, an interleukin-2 product used to stimulate immune response against cancer. In July 1993, the FDA approved Betaseron®, a recombinant beta interferon and the first treatment of its kind for patients with multiple sclerosis. Here again, partnership will speed a Chiron discovery to the world: Berlex Laboratories Inc. will market the drug, for which Chiron will be worldwide supplier.

But back to Emeryville. Larry Kurtz, vice president of corporate communications, says that the growth of Chiron reflects that of the entire industry. "There's a tremendous amount of basic research under way that will spawn new products, a veritable research fountain going. We're still on the early part of the up-curve, both at Chiron and

industrywide."

Rose Sekulovich, scientist in the department of analytical viral immunobiology, always knew she wanted to, as she puts it, "play with viruses." As a PhD student, she worked in a lab on herpesvirus gene regulation and realized early that she wanted to work in industry. "I tend to be very goal-oriented. I like to be working on something that will become a product." She sees her job as a combination of thrills and patience. "A very common joke among the lab scientists is that if 10 percent of your experiments turn out, you're doing well."

Sekulovich meets daily with her team of five to discuss data, review the needs of the project at hand, troubleshoot, and formulate short- and long-term plans. Since her team performs assays on samples from patients involved in clinical trials, she stays in

Rose Sekulovich of Chiron Corporation constant touch with clinical affairs, regulatory affairs, and





Good scientists throughout the organization: Rich Thayer (left) and Mark Pemberton (right) of Chiron

other scientists involved with the project. "I'm on the phone a lot to collaborators and people at the clinical sites."

This is the world Sekulovich has long loved, a place where many sciences come together. "It's all happening here: molecular biology, biochemistry, cellular biology, immunology, biophysics, inorganic and organic chemistry, and you have a lot of people with business and legal backgrounds as well as science. On our project team we have protein chemists, biophysicists, people in cell culture and fermentation, clinical people—everyone has a slightly different stand on any given problem. That helps you get the big picture. It's a challenge to be able to communicate with them all. That need to communicate, to have that enormous flexibility, has come as a very big, very good surprise."

Another place where many sciences come together is in

manufacturing. Mark Pemberton is director of bulk manufacturing in therapeutics manufacturing and a truly diverse scientist. Since his job is much less publicized than the glamour world of research, we asked him to describe in a sentence what he does. It was quite a sentence: "The goal of biotechnological and biopharmaceutical manufacturing is the production of quality therapeutics in a reproducible and cost-effective manner in full compliance with FDA requirements and good manufacturing practices." Then

he catches his breath and says, "That says a lot."

Indeed it does. Pemberton's work involves "constant interaction with many parts of the company." He meets continually with process development people about upcoming products, and he helps them develop cost-effective processes that will work on a large scale. Regulatory affairs keeps the FDA updated at each step of the manufacturing process. Quality control performs the analytical tests required by the FDA, and quality assurance reviews the entire manufacturing record of each batch to ensure all conforms to FDA standards. At each step, Pemberton is there.

"I do what I do because I'm a technology junkie. I get to play with some of the most complex technology available, from fermentation equipment to computers. I like the challenge of having to be knowledgeable about a number of different areas: fermentation, separation, purification, data trending, operating procedures, FDA submission requirements. You have to be a clear, coherent writer. I like being where commonsense

ability counts. What makes a career in manufacturing is your ability to make things happen."

With a huge, impatient market, Chiron has had to play instant catch-up in manufacturing Betaseron®. Barbara Kerr, vice president of human resources, says, "Twenty-five percent of our hires this year have been part of the manufacturing effort; it's not just research any more. Discovery science is at the core and always will be—but without commercialization, you can't support research."

Qualifications for research are a little different in the diagnostic units of Chiron. Richard Thayer, associate director of immunodiagnostics project management, says, "We hire people with excellent backgrounds in chemistry, biology, biochemistry, along with a fair number of medical technicians here, chemists, electrical engineers—many sciences, depending on the division. In diagnostics, we look more for people with an aptitude for applied research, people who realize that products lie at the end of the spectrum. Our people need to have worked in a lab or at another company."

The challenge as Chiron gets larger is, as Kerr puts it, "not to drift into being a big bureaucracy." Chiron people like the alternation between structure and lack of structure. "Staying entrepreneurial means staying candid and open in working together," Kerr says. "The environment is demanding and exhilarating."

WHO THEY WANT AND WHY: FIELDS AND SKILLS IN DEMAND

THE PARENT FIELDS

Genetic Recombination
Monoclonal antibody technology

FIELDS OF DREAMS

Antibody Research
Antisense
Transgenics
Gene Therapy
Cell Therapy
Peptide Synthesis
Plant Cell Tissue
Technology
Vaccines
Medical Diagnostics
Carbohydrate Chemistry
Ag Biotech
Delivery Systems

"R

esearch is still the heart and soul of this industry." That was the refrain we heard from people in pharmaceutical and biotech companies alike. "No company can stay competitive without its research scientists," Thayer of Chiron says. "New inventions are constantly revolutionizing the field. Someday, someone will come up with a better ELISA. And there's always the exciting new virus on the block."

Pharmaceutical companies have greater needs for traditional synthetic chemistry, and biotech companies crave genetic engineering, molecular and cellular biology, protein chemistry, virology, enzymology, immunology, mammalian cell culture, and

plant cell biology. But there is much crossover.

That's because needs can be extremely company-specific, especially at the smaller companies. Dorian Rinella, director of human resources for SUGEN, Inc., says her company is interested in "people with experience with target-driven cancer research, oncology, neurobiology, and diabetes." Richard Krawiec, director of investor relations and corporate communications for IDEC, says his company has targeted "rheumatoid arthritis, melanoma, and lymphoma."

Moral of this story: research the industry as a whole and your target companies in particular. As you peer into the next decade, be aware that the fields we heard

SKILLS IN DEMAND

Skills in demand for both non-PhD and PhD scientists

Cloning & Sequencing
Gene library construction
Protein library construction
Protein expression in yeast
Southern, Northern, Western blots
Radioimmunoassays
Gel electrophoresis
Tissue and cell culture
Transcription/transduction
Fluorescence microscopy
PCR/IR
NMR spectroscopy
HPLC
ELISA
Molecular modeling



AMERICAN ASSOCIATION FOR CANCER RESEARCH SCIENTIFIC CONFERENCES

FEBRUARY 19-24, 1994

***Cancer: Perturbations in Cell Cycle
Control and Genomic Integrity***

Chairpersons: Thea D. Tlsty, Chapel Hill, NC;
Lawrence A. Loeb, Seattle, WA
Banff Springs Hotel, Banff, Alberta, Canada

MARCH 5-11, 1994

Growth Factors, Development, and Cancer

Joint Meeting with Friedrich Miescher-Institut
Chairpersons: Harold L. Moses, Nashville, TN;
Bernd Groner, Basel, Switzerland
Congress Center, Interlaken, Switzerland

APRIL 10-13, 1994

85th Annual Meeting

Chairperson: Karen S. H. Antman, New York, NY
Moscone Convention Center, San Francisco, CA

OCTOBER 16-20, 1994

***Transcriptional Control of Cell Growth
and Differentiation***

Chairpersons: Eric N. Olson, Houston, TX; Bruce
M. Spiegelman, Boston, MA
Chatham Bars Inn, Chatham (Cape Cod), MA

NOVEMBER 7-11, 1994

***Modern Developments in Cancer
Therapeutics***

Joint Meeting with Academia Sinica
Chairperson: Yung-chi Cheng, New Haven, CT
Academia Sinica, Taipei, Taiwan, R.O.C.

NOVEMBER 29-DECEMBER 4, 1994

Translational Research in Cancer

Chairperson: Carlo M. Croce, Philadelphia, PA
Grove Park Inn, Asheville, NC

DECEMBER 8-13, 1994

***Basic and Clinical Aspects of
Prostate Cancer***

Chairperson: Donald S. Coffey, Baltimore, MD
Marriott's Rancho Las Palmas Resort, Rancho
Mirage (Palm Springs), CA

JANUARY 14-19, 1995

***Mechanism of Action of Retinoids,
Vitamin D, and Steroid Hormones***

Chairpersons: Michael B. Sporn, Bethesda, MD;
Ronald M. Evans, San Diego, CA; David
Mangelsdorf, San Diego, CA
Whistler Resort and Conference Center, Whistler,
B.C., Canada

FEBRUARY 13-18, 1995

***Molecular Biology of Cancer: Implications
for Prevention and Therapy***

Joint Meeting with Japanese Cancer
Association
Chairpersons: Lee W. Wattenberg, Minneapolis,
MN; Masaaki Terada, Tokyo, Japan
Maui Marriott Hotel, Maui, HI

MARCH 19-22, 1995

86th Annual Meeting

Chairperson: Donald S. Coffey, Baltimore, MD
Metro Toronto Convention Centre, Toronto,
Ontario, Canada

AACR members will receive brochures on the
above special conferences as soon as they are
available. Nonmembers should call or write:

American Association for Cancer Research
Public Ledger Building
620 Chestnut Street, Suite 816
Philadelphia, PA 19106-3483
215-440-9300 • 215-440-9313 (FAX)

Scientific excellence in a progressive, collaborative research environment is a valued part of Amgen's corporate culture. As a global leader in biotechnology, our substantial investment in R&D provides outstanding resources for innovative, self-motivated scientists. Amgen's commitment to significantly expand efforts in developing novel, breakthrough therapeutics has created numerous career opportunities in our

Inflammation Research Group

Research Scientists

(PhD) plus Postdoctoral experience.

Research Associates

(BS/MS) plus Laboratory experience.

Molecular Biology

Experience in PCR, cDNA cloning, hybridization and library construction is required. Knowledge of expression in mammalian cells or *E. coli* and subsequent gene product characterization is desired.

(Job Code OA-SC-MZ-001)

Cell Biology

Experience in cell culturing, hybridoma generation, characterization of monoclonal antibodies or adhesion and lymphocyte proliferation assays is required.

(Job Code OA-SC-MZ-002)

Biochemistry

Experience in purification, characterization and identification in one or more of the following areas: protein chemistry, carbohydrate chemistry or lipid chemistry is required.

(Job Code OA-SC-MZ-003)

Biomolecular Assays

Experience in microplate assays, antibody purification and tissue culture. Knowledge of mammalian cell expression and molecular biology is desired.

(Job Code OA-SC-RN-003)

Cell-based Assays

Experience in mammalian cell adhesion assays, cell separations, cell culture and transfection required. Must have experience in state-of-the-art molecular biology techniques, including PCR, Northern blotting and site-directed mutagenesis.

(Job Code OA-SC-RN-002)

LIMS and Robotics

Database and programming expertise and experience commensurate with information management in a highly automated laboratory setting required.

(Job Code OA-SC-RN-005)

Assay Automation Development

Substantial experience in assay design and development (ELISA, RIA, cell activation, cell adhesion). Experience in assay automation and high-throughput assay systems highly desirable.

(Job Code OA-SC-RN-006)

Carbohydrate Chemistry Laboratory

Synthetic organic chemist experienced in carbohydrate synthesis; relevant analytical experience; or experience in molecular modeling and knowledge of interaction between biomolecules.

(Job Code OA-SC-AV-005)

Please FAX OR mail your resume/curriculum vitae to:
FAX: (805) 447-1985, Amgen Inc., Staffing, Job Code (See Above), Amgen Center, Thousand Oaks, CA 91320-1789. For additional information regarding Amgen's recruitment process, please call (805) 447-4150. Please, principals only.

The Amgen logo consists of the word "AMGEN" in a bold, blue, sans-serif font. The letters are closely spaced, and the "A" and "M" are particularly prominent.

EEO-Affirmation Action employer M/F/D/V.

mentioned most often as present-and-future hotbeds are gene therapy, antisense, protein chemistry (specifically, protein synthesis), immunology, and virology. Ernst & Young's list of "hot new fields" includes cellular therapy, cholesterol control, gene therapy, genome-related science, molecular gerontology, delivery systems, proteases, rapid drug screening and design, receptors, sexual dysfunction, transcription/transduction, and vaccines.

Chemical Engineers. These talented scientists are useful throughout the modern life-science company, especially in manufacturing, process development, and plant management.

Biostatisticians. Tom Burnham of Allergan says, "Biostatisticians are a growing need because of the greater complexity of regulatory requirements and the documentation required." But not just any biostatisticians. "They have to be able to communicate their findings to management and the government," says Joyce Smith of Allergan.

Regulatory Affairs. Wanted: a strong basic background in science plus an understanding of the regulatory process. This area is of critical need in both pharmaceuticals and biotech. Experience is both rare and golden, and business or legal expertise highly rewarded. One manager commented, "Some scientists go back to school, get a law degree, and become patent attorneys, dealing with intellectual property rights and regulatory issues. It's a highly competitive, well-compensated area."

Communication Skills. The modern industrial scientist is expected to speak, write, and handle a computer well. Many people recommended that job-seekers "take at least one speech and/or writing course before they graduate—and even that won't be enough," says Pemberton of Chiron.

Influencing Skills. That's what business calls the arts of negotiation. Philip Laub, manager of human resources for Immunex, says, "We're looking for folks who are comfortable exchanging ideas in a candid group atmosphere, leveraging off each other, being nondogmatic, mentally flexible." Munk of Allergan says, "What we do on a daily basis is to sell our ideas. You have to be able to convince your team that your direction is the best."

Welcome to the political arts of compromise, consensus, give and take. Dorian Rinella of SUGEN describes how it works at today's small company: "Each week one of the labs does a presentation of their research of the last two weeks. That's the time to challenge (vastly different from 'criticize') what's being done, make suggestions, share experience. If you're the one doing the presenting, you have to be comfortable with all that. It's like a think tank."

Lab Work. Undergraduates should get as much experience in the lab as they can, either in school or in industrial co-ops, internships, or summer jobs.

The Dreaded MBA. Many industrial scientists are acquiring some academic training in business. Does this mean that as long as you're getting that PhD in neuroendocrinology, you might as well pick up an MBA? Not necessarily in research—but the science-business combination is becoming more common in project management, process development, regulatory, and clinical. Thayer of Chiron built his career on a BS in biochemistry and, after experience in genetics and in regulatory affairs, an MBA from UC Berkeley. "Companies like to support people in their career directions," Thayer says. "Chiron is pretty good at encouraging folks like me to get MBAs."

John Leonard, senior director for regulatory affairs, project management, and quality

COMPENSATION OUT WEST

CEO's

\$161-293K
\$50-100K annual bonus
options: \$1.5-3.5M

Top Managers

\$130-170K
\$32-38K bonus
options: \$400-499K

Middle Managers

\$60-100K
variable bonuses
and options

PhD researchers

\$45-65K
top range very variable, from
\$85-130K depending on track
variable options

MSs

starting: \$45K

BSs/BA's

starting: \$25-35K
mid-to-upper: \$45-50K

Sales

entry: \$35-40K
midrange: \$50K
peak: \$85K+

(Stock options more characteristic of biotech than of pharmaceuticals companies; CEO and top management salaries vary widely. Salaries depend on starting point. Add \$4-10K for jobs in applied R&D, up to \$12K for jobs in process and product development.)

Sources: Ernst & Young; Medical Advertising News; Pharmaceutical Manufacturers Association; phone survey

assurance at IDEC, says simply, "Take some business courses. They should be part of every PhD program. At least find out a little of what management's about, what accounting's about, so that you'll be better prepared for the environment you're going to be working in."

Emphasis on business experience is strongest at smaller companies, where one makes the coffee, creates the critter, and sweeps up at night too. Rinella of SUGEN says, "We've encouraged a number of our people to take courses to refresh skills or introduce them to important new areas—such as supervisory training courses. If someone feels a little weak in leadership skills, I suggest they take a course. And those courses pay dividends that I can see—even if that dividend is making someone feel more confident on the job."

Whether small or large, pharmaceutical or biotech, business values people with peripheral vision. Andrea Booth, director of corporate staffing and diversity at Syntex, a pharmaceutical firm in Palo Alto, says, "Rather than people with tunnel vision who want to work on their personal esoteric science projects, we and others look for scientists who are strategic thinkers with an orientation to the future. We look for people who can think about how their projects fit into the company picture as a whole."

In the halls of industry, no one is looked upon with greater respect than the single-minded, devoted academic scientist pursuing her dream in a lab of her own. "They do science the way it should be done, and everybody here knows that," says DeVries of Allergan. "But what's also true is that management know-how actually helps you do good science. It helps you organize people, identify goals, and delegate tasks."

Time Off. Sekulovich of Chiron says, "Before you jump into grad school, take some time to work. It will show you what industry is like and what jobs are available. It will help you decide whether you want an MS, PhD, MD, or MBA. You won't get that as an undergraduate." David B. Smith, staff researcher at the institute of organic chemistry at Syntex, says, "People came into my graduate program after a stint in industry, and they really had a clue as to how to organize their time, focus on what they wanted to do, and do it. They were bright, motivated, and were going to move on. That's great experience for any scientist." Sekulovich says, "It's only two years out of your life, and it won't slow down your future. And it will help to ensure that for the next 30 years you'll be doing something you enjoy."

Uncommon In San Diego: IDEC Pharmaceuticals

"B

iotech companies are no longer research boutiques." That's the view of Richard Krawiec, director of investor relations and corporate communications at IDEC

Pharmaceuticals Corp. of San Diego. At IDEC, there is almost as much talk about team management as there is about gene expression. Focusing on rheumatoid arthritis, melanoma, and lymphoma, IDEC is busily engaged in finding the fastest, most cost-effective way to get its products to market. "We're a lot like San Diego," says Krawiec, "in supporting growth and being forward-looking, but we're also independent in understanding that science must be balanced with management expertise."

In an allegory of the changing Californian economy, IDEC converted what was once a defense industry building into a multipurpose biotech facility, including laboratories and manufacturing wing, then merged its Mountain View and San Diego locations. Employment needs for IDEC show how company-specific biotech hiring can be. Although the emphasis falls first and foremost on good science, "we don't have as many openings in drug discovery and basic research as in other areas," according to Connie Matsui, senior director of planning and resource development. "We're building at the senior level, looking for people with experience in pharmaceuticals and/or biotech." Manufacturing and regulatory are high priorities, as are biostatisticians, clinical trial managers, and clinical data analysts.

Chris Burman, vice president of manufacturing sciences, is a *rara avis* indeed: a scientist with a track record in biotech manufacturing, having been heavily involved in helping Genentech

Changing the way medicine is practiced...

The ability to apply our innovative technology to important medical problems is the cornerstone of our remarkable success. It's the product of visionary individuals working in an environment conducive to inspiration. An environment that's produced more FDA-cleared DNA probe products than any one else. An environment dedicated to changing the way medicine is practiced.

The importance of genetic probe technology is growing, and we are at the brink of exciting diagnostic and therapeutic breakthroughs.

Our interest is high in those exceptional candidates prepared with a BS, MS or PhD in the areas of Biology Microbiology Molecular Biology Biochemistry Chemistry or Virology

As one of the few emerging biotech companies that is profitable and has proven R&D, manufacturing, marketing and sales skills, Gen-Probe will continue to grow and prosper based on our sound technology our philosophy of innovation and the expertise to continue improving existing products while developing new ones.

Explore our current opportunities by calling our Jobline at (619) 625-8666, or write to us at 9880 Campus Point Drive, Dept. 352, San Diego, CA 92121. We are an equal opportunity employer.

...through the continual evolution of genetic-probe technology.





Chiron Up-Close

Transforming the practice of medicine

Researching scientific frontiers

Applying the benefits of technology

Building sustainable businesses

Supporting a global organization

Teaming together to solve problems

Take a close look at biotechnology and the solutions that are being developed here. The most important, the most widely recognized and applauded include our work in cancer and serious infectious diseases. Now you can contribute to our leading-edge therapeutic and diagnostic tools, and help us continue to change the way the most critical diseases are understood and treated.

Look closely, and you'll see your own success!

VALIDATION MANAGER

A BS in chemical or biological science and at least 10 years' experience in the Pharmaceutical industry with an emphasis on in vitro diagnostic and medical devices are required. Box# 93-0195

SCIENTIST & POST DOC.

Positions available in gene therapy, molecular biology or cellular immunology. Ph.D. required. Box# 93-RR

PROCESS DEVELOPMENT SCIENTIST

Develop protein purification processes. A Ph.D. in biochemistry/biochemical engineering with an emphasis in protein separation is required. Box# 93-BF

DIAGNOSTIC MANUFACTURING SUPERVISOR

A BS in biochemistry or related field, a minimum 5 years' experience in diagnostic products, direct experience in production/testing of diagnostic reagents, and immunoassay techniques are required. Box# 93-329

SCIENTIST

Initial responsibilities include basic and applied research on the inhibition of proteases for the treatment of human disease. A Ph.D. or equivalent experience in biochemistry or related field is required. Box# 93-0332

SCIENTIST

Develop immunoassays for infectious disease diagnosis. Ph.D. in chemistry, biochemistry, immunology or related field with 3-5 years' proven research and development experience in the diagnostic industry are required. Box# 92-450

You can also participate in any of these areas:

- Engineering
- Information Systems
- Manufacturing
- QA/QC
- Research and Development

To apply for the above positions or for more information about finding your success here at Chiron, write to:
Chiron Corporation, Human Resources, 4560 Horton Street, Emeryville, CA 94608.

We are an equal opportunity employer.



CHIRON

tool up to manufacture TPA®. "I seem to get everything at IDEC that didn't readily fit into other divisions—process development, manufacturing, facilities, purification development, process validation, cell banking, maintenance and engineering," he says. What sciences does Burman employ in the course of a day? He laughs at the question, then says, "Well, engineering and facilities and safety, all of which I picked up on the job"—Burman's background is in microbiology and biochemistry—"and protein chemistry and biochemistry,

immunology, and cell biology." He meets constantly with everyone from research through marketing and business development, "taking a little advice from every area" as a product scales up.

At the center of this activity is the work of IDEC scientists. The career of microbiologist Mitchell Reff, director of gene expression, is a study of how the needs of industry can lead to good science, which in turn can drive manufacturing. Reff has engineered expression vectors that can produce antibodies "at rates much higher than anyone

else's," in the words of an admirer. "My focus has been on getting mammalian cells to produce large amounts, very large amounts, of proteins, usually for clinical trials in human beings," says Reff. "Over four years, I evaluated almost every system for producing proteins in mammalian cells, chose one, and over the last eight, have worked on making it quick, simple, and reproducible. That's not the sort of thing you normally would work

on in an academic lab. There, they don't normally require gram amounts of proteins. Here, you do." Reff's work eventually may lead to a plant that can produce more product for less money—exactly what industry wants.

Immunologist Nabil Hanna, senior vice president of research and preclinical development, has become the matrix manager par excellence, combining scientific and managerial understanding to lead the early discovery of products. "We assemble representatives from each discipline into teams to support each project. I make sure that the molecular biologists, geneticists, biochemists, and immunologists work as a team to speed the process."

Biochemist John Leonard, senior director for regulatory affairs, project management, and quality assurance, helps create guidelines and set goals for product development and clinical activities. In so doing, he finds he must switch momentarily from quality analysis to quality control, from project to project, from subject area to subject area. "Not that I'm an expert in all these areas—clearly I'm not—but I've hired some very good people and ask a lot of naive questions." Leonard names several areas of employment need: fermentation science, purification, and preclinical and clinical sciences.

The city of San Diego has proven very keen to develop biotech as a core industry. Mayor Susan Golding and other members of the city government have helped craft legislation that eases the process of building and scale-

up. Thus state, city, and company tool up together—all very western—to give a scientist's engineered cell lines a chance to do their stuff.

FEEDING THE ADDICTION

Perhaps that's why, despite the economic and political changes that have somewhat reined in western horizons, there's so much excitement in the scientific industry. Jerry Caulder of Mycogen says, "The new science is going to affect our lives more than any single technology because it touches everything: agriculture, bioremediation, health care, the environment." Burman of IDEC says, "It's a fascinating industry, with lots of opportunities for people who want to go right out on a limb."

Munk of Allergan says, "My 12-hour days are pretty typical of people like me. Most of us didn't go into science for the money. There's always some new interesting compound to make, some new biology to do." That's why Les Kaplan, corporate vice president, R&D, of Allergan gets up, as many do, at 5:30 a.m. to journey through the western dawn and hit the gym, "just to get ready for the day ahead." Connie Matsui of IDEC may speak for everyone when she says, "This is an addicting industry, no doubt about it. I'm hooked."

John Timpane, PhD, writes frequently on the pharmaceutical and biotech industries.

Great In The Northwest: Immunex

According to *Medical Advertising News*, Immunex Corp. of Seattle, Washington, is the number 8 biotechnology firm in the United States, with total revenues of almost \$71 million. The company recently completed terms of a merger agreement with the oncology business of Lederle Laboratories. As a result, the "new Immunex" markets several cancer products acquired through the merger, in addition to collaborating on development of new products to treat cancer.

Thanks to *Twin Peaks*, Pearl Jam, and the natural beauty of the place, Seattle and the Northwest have taken on a new mystique in American culture. And Immunex is very much an example of a western life-science company: it is near one of the finest universities in the world for recombinant research (the University of Washington), and it is prospering through joint ventures, mergers, partnerships, products (its granulocyte macrophage colony-stimulating factor, Leukine®, has been on the market since 1991)—and synergy with the culture of the Northwest.

Philip Laub, manager of human resources, believes that part of the western-ness of biotech is the risk element. "Some scientists are natural-born risk-takers. The thought of discovering a new compound and making a significant contribution to science has real appeal to these people, many of whom have devoted years to the pursuit of a doctoral degree in a very specific area of science. Here, you have to accept risk, even like it."

Not that Immunex is a small start-up—it is now "fully integrated," with a state-of-the-art manufacturing plant in nearby Bothell, a plant with the capacity to manufacture the products Immunex anticipates for the near future. Those include Pixykine®, a single protein designed to stimulate production of white cells and platelets; a small molecule designed to reverse multiple-drug resistance, a complication of cancer chemotherapy; and the receptors for interleukin-1, TNF and IL-4, which interfere with development of specific immune reactions and hold potential for treatment of arthritis, asthma, and GVHD.

Employment needs are dictated by the rapid rate of change in science. Doug Williams, vice president of research and development, says, "The need for good cell biologists is a constant here. We're cloning so many genes now that the key to finding those with clinical efficacy falls into the hands of cell biologists, who can develop clinically relevant model systems in which to develop those proteins. As time goes by, we'll need more gene cloners, more protein chemists, more people who work in gene expression in recombinant hosts, everything from immunology to in vivo biology to transgenics—the entire spectrum of the biotech work force."

Immunex also needs chemical engineers, as well as researchers with neurobiological background and rational drug design experience. Oncology and autoimmune disease are the research emphases. Elsewhere in the company, diversity is the key. "In the support wings, we draw from almost every discipline," says Laub. "You don't necessarily need a science degree in human resources or accounting."

As with many of the western scientists we spoke to, there's a certain breathlessness to Laub and Williams's descriptions of Immunex. Laub calls it "exciting," and Williams calls it "fascinating." Such is the intensity of team science in the relaxed Northwest.



San Francisco Bay Area: 192 companies **Number 1**
San Diego: 102 companies **Number 4**
LA/Orange County: 68 companies **Number 6**
Texas: 54 companies **Number 7**
Seattle: 52 companies **Number 8**
Colorado: 20 companies **Number 20**

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. Advertisements 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.
- **Mail or FAX materials to:**
Science Classified Advertising
 1333 H Street, N.W., Room 814
 Washington, DC 20005
 Telephone: 202-326-6555
 FAX: 202-682-0816
- **Rates:** Ads are \$42 per line; \$420 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.
- **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 Annemarie Vis at +44 223 302067 (telephone) or +44 223 302068 (FAX).
- **Credit Cards:** *Science* accepts 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. about fractional display ads (all ads 1/2 page and larger), contact:

Recruitment Advertising
 Deborah Cummings
 Telephone: 202-326-6541

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

Annemarie Vis
 European Recruitment Advertising
 Telephone: +44 223 302067
 FAX: +44 223 302 068

CONDITIONS: Personnel advertising is accepted only with the understanding that the advertisers do not discriminate among applicants on the basis of race, sex, religion, age, color, handicap or sexual preference. The AAAS encourages employers to actively recruit and employ underrepresented minority groups. *Science* reserves the right, at its discretion, to decline to publish advertisements submitted to it.

POSITIONS OPEN

ASSISTANT/ASSOCIATE PROFESSOR NYU MEDICAL CENTER DEPARTMENT OF BIOCHEMISTRY

The Biochemistry Department of New York University Medical Center seeks to fill a tenure track position at the level of assistant or associate professor. Areas of research currently represented in the Department include DNA replication, recombination, regulation of transcription and translation, protein folding and transport, viral/host cell interactions, cellular transformation and signal transduction. Applicants should hold a Ph.D. or M.D. degree, have at least two years of postdoctoral research experience, and are expected to establish an independent research program and participate in teaching and other departmental academic activities. Applicants should submit curriculum vitae, three letters of reference and a brief summary of current and future research interests by April 1, 1994, to: Dr. Warren Jelinek, Faculty Search Committee, Department of Biochemistry, New York University Medical Center, 550 First Avenue, New York, NY 10016. *Equal Opportunity Employer, M/F.*

PLANT ANATOMIST TENURE-TRACK, ASSISTANT PROFESSOR

Available September 1, 1994. Ph.D. required; post-doctoral teaching/research experience preferred. Strong commitment to teaching and research at the undergraduate level required. Send curriculum vitae, statement of research/teaching interests and philosophy, and three letters of reference by April 1, 1994, to: Dr. Eugene G. Bozniak, Chair, Department of Botany, c/o Human Resources, Weber State University, Ogden, UT 84408-1016. *Equal Opportunity/Affirmative Action/Employer Educator.*

Tenure-track **FACULTY POSITION** available July 1, 1994, in the Department of Pharmacology, University of Wisconsin Medical School, Madison, Wisconsin. Applications are invited from individuals who possess the Ph.D. and/or M.D. degree and who will develop a vigorous research program in molecular and/or cellular pharmacology. Especially interested in candidates at the **ASSISTANT PROFESSOR** level. Submit curriculum vitae and names of three references to: Dr. Arnold Ruoho, Chair, Search Committee, Department of Pharmacology, University of Wisconsin Medical School, 1300 University Avenue, Madison, WI 53706.

The first-round deadline for this advertisement is April 15, 1994; however, the position will remain open until filled.

The University of Wisconsin-Madison is an Equal Opportunity/Affirmative Action Employer.

CONSERVATION GENETICS

The Department of Fisheries and Wildlife and the Biotechnology Center at Utah State University seek to fill a tenure-track **ASSISTANT PROFESSORSHIP** in Conservation Genetics beginning July 1, 1994. We seek an individual with expertise in population or quantitative genetics and molecular genetic techniques, capable of applying biotechnological methods to animal conservation problems. An active research program with extramural funding and graduate student training is expected. Teaching will entail three courses per year (Genetics in Conservation and Management, Biotechnology in Natural Resources, and a graduate seminar). Ph.D. required. Postdoctoral experience preferred. Applicants should send curriculum vitae, a statement of teaching interests, and a summary of proposed research interests, and should arrange to have letters sent by three scientists who can evaluate the candidate's accomplishments and potential. Review of applications will begin on March 14, 1994, and continue until position is filled. **Conservation Genetics Search, Department of Fisheries and Wildlife, College of Natural Resources, Utah State University, Logan, UT 84322-5210. Utah State University is an Affirmative Action/Equal Opportunity Employer. Women and minority candidates are encouraged to apply.**

The Department of Physiology at Nova Southeastern University invites applications for a full-time **ASSISTANT PROFESSOR** position. Candidates must have a doctoral degree in physiology and a commitment to excellence in teaching. Preference will be given to individuals with primary interest in endocrinology. Please send curriculum vitae and list of three references by March 11, 1994, to: H. Jay Lyons, Ph.D., Department of Physiology, Nova Southeastern University, 1750 N.E. 167th Street, North Miami Beach, FL 33162.

POSITIONS OPEN

ASSISTANT PROFESSOR MARINE BIOLOGY

The Department of Life Sciences at the University of New England invites applications for a tenure-track position at the rank of **ASSISTANT PROFESSOR**, beginning fall 1994. Primary responsibilities will be to teach undergraduate courses for marine biology and environmental science/studies majors, and secondarily teach a general biology course for non-science-majors. Candidates should have a Ph.D. with specialization in marine biology, as well as demonstrated interest and experience in environmental problem-solving. Ideally, the successful candidate will be able to teach a course in marine mammals.

Significant contributions to curriculum and course development are expected, including the infusion of an interdisciplinary perspective, active and collaborative learning approaches, and critical thinking skills. Excellence in teaching and competence in scholarship are expected.

Applicants should send a résumé, a cover letter describing interest in the position, and arrange for three letters of recommendation to be sent to: Dr. John Lemons, Chair, Department of Life Sciences, University of New England, Biddeford, ME 04005. Review of applications will begin March 10, 1994.

The University of New England is an Equal Opportunity and Affirmative Action Employer. Applications from minorities and women are encouraged.

ASSISTANT PROFESSOR MOLECULAR BIOLOGIST

Department of Dermatology
 Stanford University School of Medicine

The Department of Dermatology at Stanford University invites nominations and applications for an **ASSISTANT PROFESSOR** position on the tenure-track, full-time faculty of the Stanford University School of Medicine. Candidates should hold the M.D. or Ph.D. degree. In addition, candidates should have a major interest in investigation in the molecular biology and/or molecular genetics of the connective tissue and present evidence of training and/or accomplishments in this area. *Stanford University is committed to increasing representation of women and members of minority groups on its faculty and particularly encourages applications from such candidates.* Individual candidates should submit curriculum vitae and direct correspondence to:

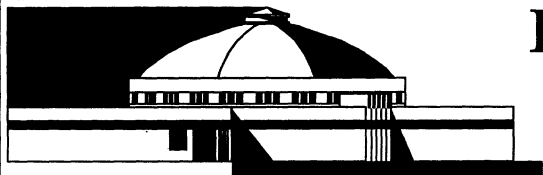
Eugene A. Bauer, M.D.
 Stanford University School of Medicine
 Department of Dermatology, Room W0071
 900 Blake Wilbur Drive
 Palo Alto, CA 94304

ASSISTANT/ASSOCIATE PROFESSOR: The Department of Pathology, Medical College of Georgia, is seeking a Ph.D. with postdoctoral experience in molecular pathology and a commitment to scholarly achievement. The individual will have primary responsibility in the Section of Anatomic Pathology for overall operation of molecular diagnostics, particularly gene rearrangements and PCR assays. The successful applicant will complement research in the department and develop a productive research program. Salary and benefits will be commensurate with experience and rank. Candidates should send curriculum vitae and 3 references to: Dr. F. W. Chandler, Department of Pathology, Medical College of Georgia, Augusta, GA 30912-3605; FAX: (706) 721-2358.

MCG IS AN EQUAL-OPPORTUNITY EMPLOYER. WOMEN, MINORITIES AND THE DISABLED ARE ENCOURAGED TO APPLY.

CALIFORNIA COLLEGE OF PODIATRIC MEDICINE

ASSISTANT PROFESSOR, PHYSIOLOGY. Full-time, tenure-track. The Department of Basic Sciences, California College of Podiatric Medicine, seeks Ph.D. to coordinate and teach human physiology. Additional background in pharmacology or neuroscience is desirable. Applicants must have a strong commitment to teaching. A complete curriculum vitae and three written references should be sent by April 1 to: Sandra Piccini, Director of Human Resources, California College of Podiatric Medicine, 1210 Scott Street, San Francisco, CA 94115. *An Affirmative Action/Equal Opportunity Employer.*



Lawrence Berkeley Laboratory

is proud to be participating in the
160th Annual AAAS Meeting

Lawrence Berkeley Laboratory (LBL), one of the premier research institutions in the world, is pioneering innovative technologies to answer the scientific challenges of the 21st century.

LBL's growing effort in the Life Sciences directs considerable resources toward better understanding a broad spectrum of biological processes. Programs include characterizing the body's long-term ability to produce stem cells, revealing the structure, metabolism, and genetic determinants of lipoproteins, and elucidating critical information elaborated in the human genome. At LBL, we provide an enriched environment to foster the complementary interactions between biologists, physicists, chemists, computer scientists and engineers. This collaborative spirit thrives at the Human Genome Center (HGC). HGC focuses on developing better methodology for sequencing, physical mapping, cDNA isolation and analysis, as well as refining tools for managing the vast amount of data being generated.

At LBL, our mission is to advance our leadership in the global search for answers to some of the most pressing questions of our time. If conducting research in an environment that promotes diversity and encourages innovation is your goal, send your resume to: **Lawrence Berkeley Laboratory, Staffing Office, Box #JSCI, One Cyclotron Road, Bldg. 938A, Berkeley, CA 94720.**

Stop by and see us at the AAAS Employment Exchange!
February 20-23, 1994 • San Francisco, California

An equal opportunity employer committed to the development of a diverse workforce.

TRUDEAU INSTITUTE, INC. **BASIC RESEARCH SCIENTISTS**

Infectious Diseases Immunologist

A vacancy exists at the assistant or associate professor level for an immunologist interested in employing modern immunological techniques to analyze immunity to infections with microbial pathogens. The successful applicant will be supplied the resources to develop his/her independent research program within the overall infectious disease program of the Trudeau Institute. Persons interested in developing models of immunity to intracellular pathogens are encouraged to apply.

THE TRUDEAU INSTITUTE is a well-endowed, not-for-profit, basic research institute with modern facilities, up-to-date equipment, in-house animal production, efficient management and an international reputation for excellence. The Trudeau Institute is located on the shore of Saranac Lake, 8 miles from Lake Placid. Competitive salary and fringe benefits are offered and institute housing will be made available.

Applications consisting of a curriculum vitae, the names and addresses of three references, and a brief description of research interests, should be addressed to:

Robert J. North, Ph.D., D.Sc.
Director
Trudeau Institute, Inc.
P.O. Box 59
Saranac Lake, NY 12983

POSTDOCTORAL RESEARCHERS

SyStemix, a dynamic biotech company pioneering the clinical use of cellular therapies, will be starting a new Postdoctoral Research Program for 1994. We offer a stimulating and intensive environment for advanced scientific training in basic research. SyStemix seeks highly motivated individuals with a recent PhD, interested in the areas of stem cell biology, hematopoietic progenitors and the molecular biology of hematopoiesis.

We offer an excellent benefits package. For more information or immediate consideration, please send your resume to: SyStemix, Inc., Dept. PDYD94, 3155 Porter Drive, Palo Alto, CA 94304 or via FAX to (415) 856-4919. We are proud to be an equal opportunity employer.

SYSTEMIX



POSITIONS OPEN

ASSISTANT PROFESSOR—PHYSIOLOGY

The Department of Biological Sciences at Mary Washington College is seeking a physiologist for a tenure-track appointment at the **ASSISTANT PROFESSOR** level. Applicants are expected to have a Ph.D. or equivalent terminal degree and must be committed to excellence in teaching. Course responsibilities will include human anatomy, human physiology, and general biology.

Mary Washington College is a liberal arts and sciences college located 50 miles south of Washington, DC. Interested persons must submit curriculum vitae, transcripts, and brief statements of teaching philosophy and research goals and must arrange to have three letters of reference sent directly to: **Personnel Office, Mary Washington College, Box 615, Fredericksburg, VA 22401**. Deadline for receipt of applications is March 9, 1994, by 5:00 p.m. Postmarks will not be honored.

Mary Washington College is deeply committed to affirmative action and encourages minorities and women to apply.

FACULTY POSITION IN IMMUNOBIOLOGY

Applications are invited for a full-time tenure-track position at the **ASSISTANT/ASSOCIATE PROFESSOR** level in the Department of Biological Sciences starting August 18, 1994. The candidate will be expected to develop a vigorous basic research program in immunobiology and to teach undergraduate/graduate-level immunology. Applicants utilizing cellular and molecular research approaches will be preferred. This position requires two years of postdoctoral training, a record of productive research, and the ability to interact collegially. Appointment at the Associate level requires a record of funded research activity and a currently funded research program. The Department of Biological Sciences has three new state-of-the-art Core Facilities in Molecular Biology, Cell Culture, and Protein Analysis. Deadline for applications is March 15, 1994, or the first of the month until the position is filled. Applicants should submit curriculum vitae, reprints of key publications, a statement of current and future research plans, and three names of references to: **Chairperson, Immunobiologist Search Committee, Department of Biological Sciences, The Wichita State University, Campus Box 26, Wichita, KS 67260-0026**. *Affirmative Action/Equal Opportunity Employer. TTY: 316-689-3067.*

BIOLOGY

Anticipated vacancy, fall 1994; full-time; **ASSISTANT** or **ASSOCIATE** level; contingent upon funding. Responsibilities will include teaching introductory biology courses as well as upper-level courses such as CVA, vertebrate physiology and anatomy and physiology. **QUALIFICATIONS:** College teaching experience is highly desirable; an earned doctorate is required. Salary is dependent upon qualifications and experience; excellent fringe benefits. *Women, minorities, and persons with disabilities are strongly encouraged to apply.* Review of applications will begin immediately, and will continue until the position is filled. A cover letter, résumé, names and telephone numbers of three references, and a transcript of doctoral study should be sent to: **Professor James Phillips, Chair, Biology Department, Westfield State College, Westfield, MA 01086**.

An Affirmative Action/Equal Opportunity Employer.

ASSISTANT/ASSOCIATE PROFESSOR MEDICAL COLLEGE OF OHIO MOLECULAR GENETICS

The Department of Physiology and Biophysics invites applications for a tenure-track position to apply techniques of molecular biology to physiological problems. The applicant must have a Ph.D., experience in Molecular Biology/Genetics and either funded grants or significant potential for developing independent funding. Participation in medical/graduate teaching is expected. Competitive salary, generous start-up funds and lab space are provided. Send curriculum vitae to: **Dr. John Rapp, Chairman, Department of Physiology and Biophysics, Medical College of Ohio, P.O. Box 10008, Toledo, OH 43699-0008**. *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT PROFESSOR OF BIOLOGY. Anticipated probationary position to begin August 31, 1994, subject to availability of funds. Ph.D. or ABD in molecular biology or closely related field required. Completed doctorate required for tenure. Preference given to individuals with completed doctorate and teaching experience. Teach undergraduate and graduate courses such as molecular biology, molecular biologic techniques, molecular genetics, microbiology, recombinant DNA techniques, advanced molecular project laboratory, and cellular biology. Send letter of application, curriculum vitae, copies of transcripts (officials required at time of employment), and three (3) letters of reference sent directly by referrers to: **Dr. Kenneth Lundberg, Interim Dean, College of Social and Natural Sciences, Bemidji State University, 1500 Birchmont Drive NE, Bemidji, MN 56601-2699**. Review of applications will begin on March 1, 1994, and continue until filled. *Equal Opportunity Educator and Employer.*

ASSISTANT PROFESSOR IN BIOLOGICAL CHEMISTRY JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE

The Department of Biological Chemistry at the Johns Hopkins University School of Medicine invites applications for tenure-track position at the Assistant Professor level. The department is seeking candidates with a commitment to excellence in research and teaching in Biochemistry. Applicants should submit curriculum vitae, list of publications, including representative reprints, three letters of recommendation and a summary of research plans to:

**Dr. Peter N. Devreotes
Search Committee Chairperson
Department of Biological Chemistry
The Johns Hopkins University
School of Medicine
725 N. Wolfe Street
Baltimore, MD 21205**

To insure full consideration, applications should be received by April 15, 1994. *Equal Opportunity/Affirmative Action Employer.*

PATHOBIOLOGY PROFESSOR AND DEPARTMENT HEAD University of Connecticut

Candidates are sought for the position of Professor and Head of the Department of Pathobiology. The position is an anticipated tenure-track appointment and will be available July 1, 1994. A D.V.M./Ph.D. or Ph.D. in a pathobiology-related discipline and demonstrated excellence in research, teaching and/or extension are required. Administrative experience is desirable, and evidence of leadership potential is required. The department integrates research, teaching and service (diagnostic laboratory and extension) components in the study of disease in animals and man. Responsibilities include: administrative leadership of the department's faculty, staff and programs; actively promoting collaborative research, teaching and extension programs within the department and within other departments. The individual is expected to work effectively with and represent faculty to university and agency administrators, state and federal agency personnel, veterinary groups and industry clientele. A demonstrated commitment to academic excellence and service programs is required. Applications received by May 1, 1994, will be given first consideration, but all applications will be considered until a suitable candidate is found. To apply, send a letter of interest with curriculum vitae and names and addresses of four references to: **Dr. Dennis Hill, Department of Pathobiology, U-89, The University of Connecticut, 61 North Eagleville Road, Storrs, CT 06269-3089**. *We encourage applications from underrepresented groups, including minorities, women and people with disabilities.*

BIOLOGY. Three **ASSISTANT PROFESSOR**, tenure-track positions available fall 1994. (1) **Microbiologist**; (2) **Vascular Plant Systematist** with expertise in molecular biology and (3) **Cell/Ultrastructural Biologist** with expertise in EM. Postdoctoral experience preferred. Screening begins March 1, 1994. Send letter of application, curriculum vitae, statement of research/teaching interests, and three letters of reference to: **Department of Biology, Western Kentucky University, Bowling Green, KY 42101-3576**. *Women and minorities encouraged to apply. Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

The Anatomy Department of the School of Veterinary Medicine, Purdue University, invites applications for a tenure-track **ASSISTANT PROFESSORSHIP** to begin July 1, 1994. We seek an individual with a D.V.M./Ph.D., M.D./Ph.D. or Ph.D. from an anatomy department in a veterinary or medical school who has had postdoctoral research experience in cell or molecular biology and experience in teaching gross veterinary anatomy or gross mammalian anatomy. The department has a reputation for its quality anatomical instruction. It fosters an environment for interdepartmental cooperation in teaching and employs innovative educational methodology. Departmental faculty participate in active research projects in neuroregeneration, orthopedic biology as well as implant biocompatibility, effects of hypogravity on embryonic development, dietary factors controlling intestinal enterocyte differentiation, and dietary fatty acid regulation of immunity. Applicants will be expected to have a collaborative or independent research program that pursues significant problems and is either supported by or has a very good potential for extramural funding. A research laboratory, research technician (for at least two years) and start-up funds will be provided by the department. Graduate student support is also available.

Application review will begin February 1, 1994, and will continue to July 1, 1994, or until the position is filled. Interested applicants should send curriculum vitae, description of teaching and research experience and plans, reprints of publications and arrange for three letters of recommendation to be sent to: **Dr. E. J. Hinsman, VAN Search Committee, School of Veterinary Medicine, Purdue University, West Lafayette, IN 47907-1242 (Telephone: 317-494-8622 or FAX: 317-494-1772).**

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

ASSISTANT/ASSOCIATE PROFESSOR OF KINESIOLOGY. Two openings: one in Motor Control/Behavior, the other in Biomechanics. Doctorate required, eligibility for physical therapy licensure preferred. Letter of application, curriculum vitae, copies of up to three published articles in refereed journals, names and addresses of 3 references to: **Dr. Gary W. Kraemer, University of Wisconsin-Madison, 1087 MSC, 1300 University Avenue, Madison, WI 53706** by April 1, 1994. Information about confidentiality of applicant names available on request. *Applications encouraged from women, minorities, persons with disabilities. The University of Wisconsin-Madison is an Equal Opportunity/Affirmative Action Employer.*

ANATOMICAL SCIENCES. Full-time, **ASSISTANT PROFESSOR**, tenure-track position available July 1, 1994. Full-time is four days per week. Responsibilities include teaching gross anatomy and histology to undergraduate dental students, and development of an externally funded research program. The position requires the Ph.D. and/or D.D.S. degree. Investigators in bone biology, craniofacial development or biomechanics will receive first consideration; experience teaching dental students is desirable. *Equal Opportunity/Affirmative Action Employer; qualified females and minorities urged to apply.* Send application and curriculum vitae by March 15, 1994, to: **Dr. Dorothy Burk, Chair, Anatomy Department, School of Dentistry, University of the Pacific, 2155 Webster Street, San Francisco, CA 94115**.

ASSISTANT PROFESSOR OF MICROBIOLOGY

Applications are invited for a tenure-track faculty position at the University of Southern California School of Medicine Department of Microbiology and Norris Comprehensive Cancer Center. The areas of interest include virology, prokaryotic and eukaryotic molecular biology, and gene regulation. However, all areas of molecular biology will be considered. The successful candidate will be expected to undertake a vigorous research program and to participate in the teaching activities of the medical and graduate schools.

Applicants should send curriculum vitae, a statement of research and teaching interests and three letters of reference to: **Dr. Peter Jones, Department of Microbiology, HMR 401, 2011 Zonal Avenue, Los Angeles, CA 90033-1034**.

USC is an Equal Opportunity/Affirmative Action Employer.

DROSOPHILA NEUROBIOLOGY INSECT CONTROL

Merck Research Laboratories is seeking applicants for two positions in the Basic Animal Science Research Department to join the Drosophila Research Group. The group focuses on mechanism based drug research in Drosophila neurobiology and physiology aimed at insect control. The successful candidates will join an insect control research group with areas of interest including ion channel structure/function, neuronal signaling, neuronal development and insect hormones. The Drosophila Research Group is part of a team of 25 researchers in the department of Genetics and Molecular Biology.

Senior Research Biologist: To perform research in Drosophila neurobiology using classical and molecular genetic approaches. The qualified individual will be part of a research team focusing on mechanism based drug development for insect control. The successful candidate will have a Ph.D. or equivalent degree and strong research training in Drosophila genetics, biochemistry and/or molecular biology.

Staff Biologist: To perform research in the Drosophila Research Group on insect control. Research experience with Drosophila is essential and familiarity with molecular biology or insect physiology is desirable. The successful candidate will have an M.S. or equivalent degree in biology, or a B.S. degree or equivalent with at least 1 year of experience working with Drosophila.

Salary, benefits and growth potential for these positions are excellent. The work location is in Rahway, New Jersey, approximately 25 miles from New York City. Please send resume, an outline of research interest and names of three references addressed to **Michael J. Stephens, Human Resources Manager, Merck & Co., Inc., AD 148, P.O. Box 2000, RY80-A-3, Rahway, NJ 07076.** EEO/AA/VH Employer.



RESEARCH SCIENTISTS Endocrinology and Molecular Immunology

Contribute to the next breakthrough
in peptide drug discovery.

At Immunobiology Research Institute, our small team of scientists is dedicated to improving the quality of life for mankind through the research and development of peptide drugs. Here, you'll have all the advantages you'd hope to find with a small company while enjoying all the benefits you'd expect from a Johnson & Johnson Company. Currently, we are seeking the following individuals to join us at our state-of-the-art facilities in west central New Jersey.

ENDOCRINE/NEUROENDOCRINE PHYSIOLOGIST

Conduct research directed to elucidating the regulatory interactions between the thymus and the classic endocrine and neuroendocrine systems. Position requires a PhD and at least 3-5 years' postdoctoral experience in either systemic or cellular endocrine physiology. Experience in physiological experimental design and execution as well as in supporting assay and biochemical methodologies, particularly as applied to peptide/protein factors, is strongly desired; experience in endocrine-immune system interactions is a plus.

ENDOCRINE PHYSIOLOGIST/BIOCHEMIST

Develop assay methodologies for endocrine/immune factors and oversee use of assays for quantitation of factors in experimental and clinical samples. Position requires a PhD and 3-5 years' postdoctoral experience in immuno- and radioreceptor assay methodologies for quantitation of protein/peptide factors as well as supporting immunological and biochemical methodologies. Experience in reagent and assay development, assay validation, and assay utilization for quantitation of protein/peptide factors in biological fluids and extracts is strongly desired.

MOLECULAR IMMUNOLOGIST/ BIOLOGIST

Position requires a PhD with 3+ years' postdoctoral experience in molecular approaches to receptor isolation/characterization, especially cytokine/lymphokine receptors and/or receptor-mediated signal transduction.

In addition to the competitive salaries and extensive J&J benefits package that we offer, you'll also have the opportunity to work at the forefront of medical research alongside some of the brightest minds in the pharmaceutical industry.

For consideration, send your resume, indicating position of interest, to: Manager, Human Resources, Immunobiology Research Institute, Route 22 East, P.O. Box 999, Annandale, NJ 08801-0999. We are an equal opportunity employer.



Research Institute

a Johnson & Johnson company

Leadership Beyond Compliance

UNIVERSITY OF CONNECTICUT

Director of Biotechnology

The University of Connecticut is seeking an outstanding individual for the position of **Director of Biotechnology**. Responsibilities include overseeing, coordinating and stimulating the growth and development of biotechnology at the University. The Director will be expected to develop external collaborations to augment in-house research in biotechnology, encourage effective technological interaction between basic scientific research and industry, provide resources and specialized facilities for the reduction-to-practice of discoveries, initiate interdisciplinary research projects, and develop special state-of-the-art programs for researchers in biotechnology. In addition, the Director will have responsibility for management of the Biotechnology facilities at the University presently consisting of the National Laboratory for Analytical Ultracentrifugation, Animal Cell Culture, Fermentation and Separation, Image Processing and Analysis, Macromolecular Characterization, Plant Cell Culture, Training and Education, and Transgenic Animals.

Requirements for this anticipated position include a Ph.D. degree, strong research (ongoing)/academic/industrial background along with the administrative, management, and interpersonal skills in communication required to foster the development of biotechnology University-wide, and to enhance interaction with the industrial community. Preference will be given to candidates who qualify for faculty appointment in one of the relevant schools or colleges of the University-Agriculture, Engineering, Pharmacy, Liberal Arts and Sciences (Biology, Marine Science).

Candidates should send curriculum vitae, names, addresses and telephone numbers of five references, and a statement of philosophy regarding the development of biotechnology in an academic environment vis-a-vis industry to: Dr. Thomas G. Giolas, Chairperson, Biotechnology Search Committee, University of Connecticut, Graduate Center, U-6, 438 Whitney Road Extension, Storrs, CT 06269-1006. The application review will begin immediately and continue until the position is filled. The University of Connecticut encourages minorities, women, and people with disabilities to apply for this position. (Search #4A188)



Announcement:

Look for the
Gordon Research
Conferences summer
schedule in next
week's issue of
SCIENCE
18 February 1994



IDEC Pharmaceuticals Corporation has gathered a dedicated scientific and administrative team focused on achieving our corporate mission of developing antibody-based therapeutics. We pride ourselves in the excellence of our team members and invite you to join us.

Scientist - Antibody Discovery

This position will lead a group that is responsible for generating and characterizing antibodies against cell surface receptors for therapy in cancer and autoimmune diseases. We seek candidates qualified by an appropriate Ph.D. plus 4-8 years of post-doctoral experience in immunology. Expertise in immunobiology and a working knowledge of B-cell biology is essential. Excellent group management and interpersonal skills are required.

Scientist - Cell Biology

This position will develop protocols and evaluate *in-vitro* models for assessing the immunotherapeutic potential of cancer vaccines. The position also involves designing assays for cytotoxic T lymphocyte induction and protocols for optimization of immunization. The qualifications for this position include a Ph.D. plus 4-10 years' experience including cellular immunology and T-cell biology. Excellent communication & supervisory skills are also required.

Post Doctoral Fellow - Human Immunology

We seek a Postdoctoral Fellow to join our growing team. This position will focus on developing and applying alternative methods for generation and isolation of antigen-specific human monoclonal antibodies. The responsibilities include immunization of human lymphocytes *in vitro* and in SCID-hu mice and generation of combinatorial immunoglobulin gene libraries. The successful candidate will have a Ph.D. in cellular/molecular immunology or a closely related field and experience with cell culture and antibodies; experience with molecular cloning is preferred.

We offer a competitive compensation package and excellent working conditions. For consideration for these positions, please send your resume and references to: IDEC Pharmaceuticals Corp., Ad HI, 11011 Torreyana Rd., San Diego, CA 92121. EOE.



Senior Protein Chemist and Associate/Full Professor University of Illinois at Chicago

Applications are invited for a position as Head of the Protein Sequencing/Synthesis Laboratory in the UIC Research Resources Center (50%) and tenured Associate/Full Professor in the Department of Biochemistry (50%). We seek faculty who will have a commitment to facilitating university research programs through management of a centralized protein chemistry laboratory and participation in service, training, administrative activities, and demonstrated commitment to equality of opportunity. Applicants are expected to have established expertise and an active, independent and externally funded research program in protein/peptide chemistry. Applicants should send a CV, statement of career interests, summary of current and future research plans and three letters of reference to: Protein Chemist Search Committee, c/o D. Debelak, Search Coordinator, Office of the Vice Chancellor for Research (m/c 672), 310 AOB, 1737 W. Polk Street, University of Illinois at Chicago, Chicago, Illinois 60612. Application deadline: March 31, 1994. *The University of Illinois is an Equal Opportunity/Affirmative Action Employer.*

Biotransformation Laboratories

Join the Growth. Join the Success.

Pfizer, a Fortune 100 company, one of the largest pharmaceutical companies in the world and a multi-million dollar industry leader, can offer you a world of challenge, opportunity and achievement where you can make a significant contribution to the research and development of exciting new products to be introduced in the coming decade...and the new century.

Pfizer Central Research Laboratories in Groton, Connecticut are the company's primary U.S. research facilities committed to creating a healthier world population. In addition, the Central Research Laboratories represent one of only a handful of R&D organizations with a budget over \$1 billion to support continued advances in science. To accomplish that goal we are actively recruiting the following positions in laboratory research towards the discovery of new human medicinal therapeutics.

A recent expansion in the Biotransformation Laboratories has created several career opportunities for talented chemists. Currently we are seeking highly motivated Research Scientists for the following positions:

Research Scientist-Isolation Chemist

The successful candidate will be responsible for establishing biotransformation technology as an integral part of drug discovery processes; carrying out microbial and enzymatic transformations of designated compounds in collaboration with microbiologists; and bringing innovation into this area, while working on automation and miniaturization of the processes involved, as well as expanding the biotransformation database. Requires a PhD with a background in natural product isolation, structure determination, medicinal chemistry or pharmacognosy, and several years experience in the designated area. The ability to characterize complicated molecules out of a complex mixture is most critical. Working knowledge of HPLC and other chromatographic methods and 2D NMR and other instrumental methods is necessary.

Research Scientist-Enzymatic Chemist

The successful candidate will be responsible for establishing biotransformation technology as an integral part of drug discovery processes; carrying out enzyme-based transformations of designated compounds, including isolation and immobilization of enzymes; functioning as a resource laboratory to other synthetic chemists, to provide expertise in handling enzymes and to maintain a collection of enzymes; and working on automation and miniaturization of the processes involved. Requires a PhD with a background in enzymology, organic synthesis or bioprocess technologies using enzymes and several years experience in the designated area. Extensive experience with enzymes used in the preparation of organic molecules is necessary. Isolation techniques using HPLC and other chromatographic methods and structure determination expertise are desirable.

Assistant Scientists (2)

To be responsible for the isolation and characterization of biotransformed compounds as a result of microbial or enzymatic processes where the ability to isolate mg. to gram quantities of pure compounds out of a complex mixture is most critical. Knowledge of fermentation processes and enzymology is definitely a plus. These positions require a BS/BA or MS/MA with experience in natural product isolation, organic synthesis using enzymes, or bioprocess technologies. Familiarity with modern chromatographic and analytical tools such as HPLC, NMR, IR, UV-VIS, and MS is necessary.

We offer competitive salaries and a full range of benefits including medical and dental insurance, paid holidays and vacations, educational assistance, savings and investment plan, pension plan, relocation assistance and more. Our R&D facility located in a southeastern Connecticut shore community, gives access to the well known academic and cultural centers of the Northeast, and offers the attractions of a New England lifestyle.

To learn how you can be part of the future of Pfizer, send your resume to: **Mr. Kym Goddu, Assistant Manager, Employee Resources, Pfizer Inc, Central Research Division, Eastern Point Road, Groton, CT 06340.** An equal opportunity employer.



Central Research
Bringing science to life.

POSITIONS OPEN

ASSISTANT PROFESSOR

Department of Neuro-Oncology and Brain Tumor Center

Tenure-track position available for a Ph.D. or M.D./Ph.D. with experience and expertise in conducting laboratory research in molecular and cellular biology with specific emphasis in one or more of the following areas: signal transduction, tumor suppressor genes, protein tyrosine kinases, or molecular strategies for solid tumor therapy. Experience with brain tumors is encouraged but not required. Salary and benefits are highly competitive. Send curriculum vitae, summary of research interests, and references to: **Victor A. Levin, M.D., Department of Neuro-Oncology-Box 100, University of Texas M. D. Anderson Cancer Center, 1515 Holcombe Boulevard, Houston, TX 77030.**

Equal Opportunity/Affirmative Action Employer. Smoke-free environment.

MOLECULAR TOXICOLOGIST

The Department of Community and Environmental Medicine at the College of Medicine, University of California, Irvine, seeks, subject to funding, to fill a **POSITION IN MOLECULAR TOXICOLOGY**. Applicants should have a Ph.D. in biochemistry/molecular biology with postdoctoral training in toxicology, and should have a strong interest in conducting research in molecular toxicology with special emphasis on cloning genes for protein biomarkers for early detection of ovarian cancer in humans. The position to be filled is **ASSISTANT ADJUNCT PROFESSOR** and is to be funded by the applicant's own research grant(s). In addition to conducting basic research, academic duties include teaching in the Graduate Program in Environmental Toxicology and in the College of Medicine. Qualified applicants should send their applications including curriculum vitae, summary of research and teaching plans, and the names and addresses of three references to: **Daniel B. Menzel, Ph.D., Chair, Department of Community and Environmental Medicine, University of California, Irvine, CA 92717-1825.** *UCI: Rooted in education; enriched by diversity.*

VISITING ASSISTANT PROFESSOR OF BIOLOGY

Applications are invited from qualified zoologists to fill a sabbatical leave position for the 1994-95 academic year. Applicants will be expected to teach courses in chordate comparative anatomy, histology, evolution and the section on evolution in the general biology course. Prior experience teaching at the undergraduate level is important. Please send curriculum vitae, statement of teaching philosophy, and three letters of recommendation by 5 April 1994 to: **Dr. Bruce Criley, Chair, Department of Biology, Illinois Wesleyan University, Bloomington, IL 61702-2900.**

Illinois Wesleyan University is an Equal Opportunity Employer and persons from minority groups and women are encouraged to apply.

ASSOCIATE OR FULL PROFESSOR PHARMACOLOGY/TOXICOLOGY UNIVERSITY OF WISCONSIN

The Division of Pharmacology and Toxicology, in the School of Pharmacy, University of Wisconsin-Madison seeks applicants for the position of **Associate or Full Professor**. The successful applicant will have demonstrated a vigorous research program with a strong history of extramural funding, and will have a commitment to excellence in teaching at both the graduate and undergraduate levels. We are looking for a faculty member who can apply modern molecular techniques to solving relevant biological problems in pharmacology and/or toxicology. Applications must be submitted by April 15, 1994. Send curriculum vitae, a description of research focus and names of three references to: **Dr. Richard E. Peterson, Chair Search Committee, School of Pharmacy, University of Wisconsin, 425 N. Charter Street, Madison, WI 53706.**

The University of Wisconsin is an Equal Opportunity Employer. Unless confidentiality is requested in writing, information regarding the applicants must be released upon request. Finalists cannot be guaranteed confidentiality.

POSITIONS OPEN

DISTINGUISHED VISITING PROFESSORS SOUGHT

The University of Wisconsin System Women's Studies Consortium's Women and Science Program, "Science, Diversity, and Community: Revitalizing Introductory Curricula," solicits nominations and applications for Distinguished Visiting Professors (DVP) for the spring and fall semesters of 1995. The program—funded by the Department of Undergraduate Education of the National Science Foundation—addresses the underrepresentation of women and minorities in math and science. The DVP should have successfully implemented teaching innovations at her home institution. Typical DVP's will teach a model introductory science or math course for one semester at an institution within the UW system and participate in intensive faculty development activities with their hosts to promote curricular and pedagogical change that is conducive to attracting and retaining female and minority students. Please send names or letter of interest and curriculum vitae to: **Dr. Rebecca D. Armstrong, Director, Women and Science Program, 7133 Helen C. White Hall, 600 North Park Street, Madison, WI 53706** by March 1, 1994. For more information call 608/263-7467.

ASSISTANT PROFESSOR MICROBIOLOGY/MOLECULAR BIOLOGY SUNY—The College at New Paltz

A tenure-track position starting in August 1994. Ph.D. required. The successful applicant will teach general microbiology, molecular biology, and courses in area of specialty, and develop an active research program. Send letter of interest, curriculum vitae, statement of teaching and research interests, and three references to: **Dr. Arnold Nemorofsky, Search Chair, HAB 902, The College at New Paltz, New Paltz, NY 12561-2499.** Review begins March 1, 1994.

HEAD DEPARTMENT OF PHARMACOLOGY University of Illinois at Chicago College of Medicine

The University of Illinois at Chicago (UIC) College of Medicine invites applications and nominations for the position of Head of its Department of Pharmacology. The Department of Pharmacology is one of six basic science departments within the College. It has 16 full-time faculty members, a well-established and active graduate program, participates in the education of medical students and in the combined M.D./Ph.D. program. The College of Medicine is part of Chicago's Westside Medical Center District, which is well-known for its large concentration of public and private health care and research facilities. UIC is located just west of the Chicago Loop area and is an established multicultural and ethnically diverse University.

Candidates for this position should have a Ph.D. and/or M.D. degree, a distinguished record of scholarly activity, a nationally recognized research program within the broadly defined area of pharmacological science, and the ability to administer a comprehensive academic program.

Interested individuals should submit a letter of application, curriculum vitae that includes a summary of their research program and three references to:

Philip Matsumura, Ph.D., Chair, Search Committee Professor and Head Department of Microbiology/Immunology (M/C 790) 901 South Wolcott Chicago, IL 60612-7344

University of Illinois at Chicago is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.

DIRECTOR PRE-CLINICAL STUDIES NEW YORK CHIROPRACTIC COLLEGE

Responsibility for pre-clinical courses including anatomy, pathology, physiology and neurophysiology. Supervision of pre-clinical faculty, evaluation procedures, scheduling, budget review and coordination of academic counseling. Limited teaching responsibilities.

Requires Ph.D. or M.S. in basic sciences, prefer D.C. with graduate studies in basic sciences. Require several years of teaching and administrative experience. Send résumé to: **Director of Human Resources, New York Chiropractic College, 2360 Route 89, Seneca Falls, NY 13148-0800.**

POSITIONS OPEN

CHIEF/DIRECTOR/DEPARTMENT HEADS

CHAIR, Department of Transplantation Medicine and Extracorporeal Therapy. The New York Hospital seeks applications for the Chair of the Department of Transplantation Medicine and Extracorporeal Therapy. The successful candidate must be skilled in transplant research, transplant medicine, must be Board-certified in his or her specialty and must have proven administrative, research and leadership skills. Responsibilities will include expanding transplant services within the New York Hospital and its network; supervising the clinical transplant medicine program, the extracorporeal therapy program, and fellowship training; expanding research programs; and supervising the immunogenetics and immunologic monitoring laboratories at the Rogosin Institute. Applicants should send a letter outlining their career goals and curriculum vitae to: **Dr. Harry L. Bush, Jr., The New York Hospital, 525 East 68 Street, Suite F-2011, New York, NY 10021.**

UNIVERSITY OF TOLEDO CHAIRPERSON DEPARTMENT OF BIOLOGY

The University of Toledo invites applications and nominations for Chairperson of the Department of Biology. The University is a comprehensive public university with an enrollment of about 25,000 students and currently ranks 13th in the nation among public universities in the number of National Merit Scholars enrolled. The Biology Department has 19 full-time faculty and a Ph.D. program with major emphases in ecology and cell/molecular biology. During the past ten years, the University has experienced a steady growth in its research initiative and recently received state funding for a new \$33 million Pharmacy, Chemistry, Life Science Complex. In addition, a new \$6 million research center on Lake Erie is scheduled for construction and will house the department's program in aquatic ecology. Candidates should have the desire and capability to provide strong leadership in both research and teaching. They should have a record of scholarship commensurate with the rank of full professor, a track record of funded research and demonstrable administrative ability. A letter of application and a résumé including a statement of research interests and names of at least three references should be submitted to: **Chair, Search Committee, Department of Biology, University of Toledo, Toledo, OH 43606-3390.** Applications will be considered until the position is filled. *The University of Toledo is an Affirmative Action/Equal Opportunity Employer, M/F/D/V. Women and minorities are encouraged to apply.*

FACULTY POSITION: Central Methodist College is seeking a person or persons who demonstrate(s) excellence in teaching. The Division of Science and Mathematics is accepting applications for a tenure-track position teaching General Biology with laboratories and one other course each semester. Research with undergraduates is encouraged. The applicant should have a Ph.D. ABD will be considered. The position begins in August 1994. Applicants are requested to send letter of application, résumé, official transcripts, and names, addresses and telephone numbers of three references to: **Dr. Roger Lembke, Division of Science and Mathematics, Central Methodist College, Fayette, MO 65248. Office: (816) 248-3392 x372, FAX: (816) 248-1634. An Affirmative Action/Equal Opportunity Employer.**

DEPARTMENT OF NUTRITION CASE WESTERN RESERVE UNIVERSITY

We seek a faculty member to conduct basic and clinical investigations in nutritional biochemistry and metabolism. We are particularly interested in (i) the intra- and inter-organ metabolism of nutrients, (ii) the use of stable isotope techniques for investigating these processes, and (iii) the design and testing of synthetic nutrients. The appointee will develop independent research programs and participate in the teaching and training of graduate and postgraduate students. Send curriculum vitae, representative reprints, outline of research program and three letters of references by March 15, 1994, to: **Dr. Henri Brunengraber, Chair, Department of Nutrition, Case Western Reserve University, Cleveland, OH 44106.** *CWRU is an Equal Opportunity Employer and encourages applications from minorities and women.*

Immunex Corporation is a leading biotechnology company focused on the discovery, development, manufacture and marketing of products to treat cancer and autoimmune disease. We currently have the following opportunities:

STAFF SCIENTIST IMMUNOBIOLOGY

The successful candidate will direct research involved with establishing culture techniques for gastrointestinal epithelium and discovery of cytokines which promote their growth. Scientists with a Ph.D. in cell biology, 2 years experience culturing GI epithelium, and a background in studying cytokine effects on GI epithelium are encouraged to apply. Job #7215243.

BIOCHEMICAL ENGINEER MAMMALIAN CELL DEVELOPMENT

The selected candidate will have a strong emphasis in the scale-up of mammalian cell culture processes to complement our interdisciplinary Mammalian Cell Development team. A Ph.D. in Chemical or Biochemical Engineering with at least 3 years of direct experience in the development of mammalian cell culture processes is required. Job #7215346.

PURIFICATION MANAGER

The successful candidate will be responsible for managing and scheduling large-scale purification operations in a licensed facility as well as supporting and overseeing new and ongoing process development projects. We require a BS degree in a related scientific discipline and a minimum of 3 years' protein purification experience with 1-2 years of GMP environment. Job #8840357.

For consideration, please submit C.V., specifying the appropriate job number, three references and a list of publications to: IMMUNEX CORPORATION, Attn: Human Resources Dept., 51 University Street, Seattle, WA 98101. An equal opportunity employer.

IMMUNEX®

We are a small, growth-oriented biotechnology company with a unique and technically challenging opportunity for an experienced manager capable of bringing a new product from the R&D stage to full production.

The individual selected for this important role will assume overall responsibility for the production of quality DNA reagents, while directing personnel, material flow and equipment utilization within GMP guidelines. Other responsibilities include managing the activities related to the purification and restriction of plasmid DNA, PEG fractionation and strand separation and administering the Radiation Safety Program.

The ideal candidate's profile includes a PhD in Chemistry, Chemical Engineering, or Biochemistry, and 4-6 years of related experience in recombinant

DNA. The ability to participate in site selection, recommend process/equipment/methods improvements, and a solid background in GMPs are also required. Additionally, a working knowledge of the following is desired: fermentation of recombinant organisms; large scale purification of plasmid DNA; enzymatic manipulation of DNA; radioisotope storage, use, disposal, and related safety requirements; acrylamide and agarose gel electrophoresis; and other molecular biology methods.

This is an exceptional opportunity for professional recognition within the biotechnology community. The position also offers a very attractive compensation package.

Please send a detailed resume of your accomplishments and compensation history in confidence to: **Polypore Inc., PCOM Microbiology Dept., 4170 City Avenue, Philadelphia, PA 19131. Attn: Thor W. Nilsen.** We are an equal opportunity employer m/f/d/v.

BIOPROCESS OPERATIONS MANAGER

CTI

CELL THERAPEUTICS, INC.

Cell Therapeutics, Inc., is an innovative biopharmaceutical company focused on the design and development of a variety of drugs that treat significant human diseases. All positions require a minimum of 5-8 years industry experience. We currently have the following opportunities available:

REGULATORY AFFAIRS MANAGER

Preparation, compilation and coordination of drug applications (IND, sNDA, NDA) and other regulatory submissions (DMF, DRLS). Hands-on experience in US drug regulatory submissions and regulations in the drug pharmaceutical industry. Ref #JA194S

QA AUDITOR

Compliance audits of contract facilities and clinical study sites in accordance with GMP, GLP, and/or GCP requirements. Strong knowledge of drug forms, especially parenterals, including development, manufacturing, testing, and aspects of process validation. Ref #DW194S

HEAD OF IMMUNOLOGY

Team Leader to direct the development of synthetic compounds for treatment of vascular diseases such as restenosis, reperfusion injury, and proliferative retinopathies. Post-academic training or industry experience in cellular immunology with direct experience with animal models of autoimmune diseases. Ref #JS194S1

GROUP LEADER/ANGIOGENESIS

Experienced in endothelial cell or smooth muscle cell biology with an emphasis on growth factor and/or adhesion molecule biology. Ref #JS194S2

PHARMACOLOGIST/TOXICOLOGIST

Ph.D. responsible for pharmacokinetics, mechanism of action and toxicology of CTI compounds. Ref #JS194S3

PUBLIC/INVESTOR RELATIONS DIRECTOR

Responsible for developing and directing programs that promote a favorable image of CTI in accordance with our long-range goals and objectives. Review and develop information to be released to the public such as annual and quarterly reports as well as be the direct liaison with the investment community and potential corporate partners. Ref #JB194S1

MARKETING DIRECTOR

Implements innovative marketing approaches for introducing new products including pre-launch evaluation, strategic planning, and scientific seeding with carry through to product launch and post marketing surveillance. Ref #JB194S2

DOCUMENTATION MANAGER

Creation and direction of Quality Control documentation systems. Review of batch documentation and system approvals. Ref #EO194S

CTI's location on Puget Sound in downtown Seattle provides spectacular views and easy access to all that this major metropolitan area has to offer. We also offer an attractive compensation and benefits package as well as an environment where your contributions can make a significant difference. Please send or FAX your CV referencing job number to:

**Human Resources
Cell Therapeutics, Inc.
201 Elliott Avenue West, Suite 400
Seattle, WA 98119
FAX: (206) 284-6206**

**We'll be at the Biotechnical Job Fair, February
11 & 12 in Secaucus, New Jersey.**

Equal Opportunity Employer



A \$30,000 cash

prize to an

outstanding

American

scientist in

recognition of

his or her

contributions to

medical progress

Nominations Requested for
the 1994 Recipient of

THE SABIN AWARD

Created by *Americans for Medical Progress Educational Foundation* to honor heroes of science and medicine, The Sabin Award is named for Albert B. Sabin, M.D., developer of the oral polio vaccine.

The nominee must have contributed to the welfare of mankind by conducting biomedical research which resulted in the saving of human life or betterment of human health. Nominations must be made in the form of a letter, and two supporting nominating letters, setting forth in detail the significance of the work upon which the nomination is based. The nominees' curriculum vitae must also accompany the nomination.

Nominations should be submitted by mail or fax before 5:00 pm, March 15, 1994, to: Susan E. Paris, President, Americans for Medical Progress Educational Foundation, Crystal Square Three, Suite 907, 1735 Jefferson Davis Highway, Arlington, VA 22202-3401 [Phone: (703) 412-1111 - Fax: (703) 412-1116].

Medical Physicist in Neuroradiology Research

The Department of Radiology at the University of Minnesota has two tenure track positions at the rank of Assistant or Associate Professor in Neuroradiology Medical Physics Research, effective May 1, 1994. Appointment at the rank of Assistant Professor requires: a Ph.D. in Medical Physics; one (1) year postdoctoral training in neurosciences, specifically angiographic and interventional neuroradiology and nuclear magnetic resonance (i.e. imaging, spectroscopy, angiography, and functional); and documented involvement in quality research accepted or published in peer-reviewed journals. Appointment at the rank of Associate Professor requires: a minimum of four (4) years postdoctoral training; professional distinction in research and writing; and demonstrated effectiveness in teaching and advising of graduate and undergraduate students; in addition to the other qualifications listed for Assistant Professor status. Primary responsibilities include active participation in all neuroradiological basic science research, including routine imaging (MRI, CT, myelography, and routine angiography), and interventional neuroradiology (embolic materials to occlude blood vessels in brain, spinal cord, head, neck and other areas). The research section will undertake a variety of research projects based on clinical needs, with a major focus on cerebrovascular disease. Salary is negotiable and competitive, and is dependent upon past scholarly productivity and post-Ph.D. experience. Applications will be accepted through April 15, 1994. Send letters requesting formal consideration to: Dr. E. Russell Ritenour, Department of Radiology, Box 292 UMHC, University of Minnesota, 420 Delaware Street, S.E., Minneapolis, Minnesota 55455-0392. The University of Minnesota is an equal opportunity educator and employer, and specifically invites and encourages applications from women and minorities.

Director of Neurophysiology and Neuroradiology Research

The Department of Radiology at the University of Minnesota has a tenured position at the rank of Associate or full Professor and Director of Neurophysiology and Neuroradiology Research, effective May 1, 1994. Appointment at the rank of Associate Professor requires: a Ph.D. in Neurophysiology; four (4) years postdoctoral experience in neurosciences, specifically angiographic and interventional neuroradiology and nuclear magnetic resonance (i.e. imaging, spectroscopy, angiography, and functional); postdoctoral experience with clinical outcomes analysis; professional distinction in research and writing; demonstrated effectiveness in teaching and advising of graduate and undergraduate students. Appointment at the rank of full Professor requires: a minimum of six (6) years postdoctoral experience in neurosciences; a national/international reputation in research and writing; evidence of leadership in professional field; in addition to the other qualifications listed for Associate Professor status. Primary responsibilities includes direction and coordination of all neuroradiological basic science research, including routine imaging (MRI, CT, myelography, and routine angiography), and interventional neuroradiology (embolic materials to occlude blood vessels in the brain, spinal cord, head, neck, and other areas). The research section will undertake a variety of research projects based on clinical needs, with a major focus on cerebrovascular disease. Salary is negotiable and competitive, and is dependent upon past scholarly productivity and post-Ph.D. experience. Applications will be accepted through April 15, 1994. Send letters requesting formal consideration to: Dr. Richard E. Latchaw, Department of Radiology, Box 292 UMHC, University of Minnesota, 420 Delaware Street, S.E., Minneapolis, Minnesota 55455-0392. The University of Minnesota is an equal opportunity educator and employer, and specifically invites and encourages applications from women and minorities.



Washington

WASHINGTON UNIVERSITY IN ST. LOUIS

Biology & Biomedical Sciences

Graduate and postdoctoral training
opportunities in...

Virology

- Lawrence Gelb** - Biology and molecular biology of Varicella-Zoster virus.
- Henry Huang** - Molecular biology of Alpha viruses, antiviral drug design, viral gene expression vectors.
- David Leib** - Latency and molecular biology of herpes simplex virus.
- John Majors** - Regulation of gene expression in retroviruses.
- Paul Olivo** - Herpes simplex virus DNA replication and latency.
- Jay Pepose** - Herpes simplex virus reactivation.
- Lee Ratner** - Transforming and cytopathic determinants of human and simian retroviruses.
- Charles Rice** - Hepatitis C virus: replication, pathogenesis, and immunology.
- Milton Schlesinger** - Assembly of enveloped-RNA animal viruses.
- Sondra Schlesinger** - RNA viruses, RNA-protein interactions, viruses as vectors for gene expression.
- Sam Speck** - Epstein-Barr virus; regulation of viral transcription and transformation of B-lymphocytes.
- Herbert Virgin** - Interactions between the immune system and viral infection.

...and others

Please direct inquiries for postdoctoral training to specific faculty members. For graduate school information, please write to: Biology & Biomedical Sciences, Campus Box 8226, 660 S. Euclid Ave., St. Louis, MO 63110-1093; or call 800-852-9074.

HEALTH SCIENTISTS

A leading scientific and regulatory affairs consulting firm, ENVIRON Corporation provides a broad range of risk assessment services to both private and public sector clients addressing the complex issues associated with human exposures to hazardous substances. Our clients include some of the nation's leading law firms, Fortune 100 companies, national trade associations, insurance professionals, and public sector agencies concerned with health risk and environmental issues. Our highly qualified staff of 300 work from our offices in Arlington, VA; Princeton, NJ; Emeryville and Irvine, CA; and Houston, TX.

The success of our national practice has created exciting career opportunities for individuals who are eager to contribute creative ideas to innovative problem-solving. Successful candidates will join our team in providing diverse, but complementary, scientific and regulatory affairs services.

Health Scientist positions are available for both entry-level and experienced candidates who hold an M.S. or a Ph.D. in biology, toxicology, pharmacology, public health, risk assessment, or related disciplines.

We are seeking individuals with strong analytical ability and excellent writing skills. Prior risk assessment experience is not required.

ENVIRON offers competitive salaries and benefits, as well as career development and advancement opportunities.

Please submit your résumé and a writing sample to:

ENVIRON

Attention Dept. Science 294
4350 North Fairfax Drive
Arlington, VA 22203

ENVIRON is an equal opportunity employer.

Research

CellPro, Incorporated is an exciting, young biotechnology company focused on developing, manufacturing, and marketing of affinity cell separation systems for use in therapeutic, research, and diagnostic applications. Our Research Group is currently expanding into new areas, which has created two outstanding opportunities at our Seattle-area firm.

SCIENTIST **T-CELL THERAPY**

The successful candidate will be responsible for establishing and supervising a cellular immunology laboratory. This individual will develop new approaches and clinical applications towards the use of cellular immunotherapy in the areas of specific tumor recognition, transplantation and graft rejection, and treatment of autoimmune diseases. Other activities will include interacting with our engineering group to develop prototype devices and with our clinical group to develop trials.

Candidates with a Ph.D. in Immunology, Hematology, or Cell Biology and a minimum of 5 years' experience in human cellular immunology are encouraged to apply. Previous experience with T-Cell activation and proliferation assays, response to tumor and/or viral antigens, graft versus host disease, autoimmunity, and flow cytometry is highly desirable. Excellent communication skills and the ability to work in a collaborative work environment are required.

SCIENTIST **ANTIBODY DISCOVERY**

The successful candidate will be responsible for providing scientific leadership for the discovery, development and acquisition of novel monoclonal antibodies for use in our cell separation technology. This individual will generate, modify and evaluate new monoclonal antibodies, with particular emphasis on tumor cell purging and other rare cell selection. Activities will include working with an interdisciplinary team to develop new ligands and capture systems for use in new medical devices.

Candidates with a Ph.D. in Biochemistry, Immunology, Cell Biology or Hematology and a minimum of 5 years' experience in monoclonal antibody development are encouraged to apply. Previous experience developing biopharmaceuticals or diagnostic products is preferred. Excellent communication skills and the ability to work collaboratively are required.

In addition to our leading technology and the Pacific Northwest life-style, CellPro offers competitive salaries and an excellent benefits package. For immediate consideration, please send your resume to:



**Human Resources,
CellPro, Incorporated
22322 20th Ave. SE, Suite 100
Bothell, WA 98021-8446.
FAX (206)485-4787.**

Equal Opportunity Employer.

As a privately held, start-up company with laboratories in the Research Triangle Park (RTP), NC, ICAGEN is the first and only US company exclusively focused on ion channel drug discovery for broad-ranging therapeutic applications in metabolic, cardiovascular and nervous system diseases.

Our approach is to bring a skilled and motivated team of scientists together to tackle the unlimited possibilities for the discovery of compounds which interact with ion channels. New scientists will work briefly in the academic laboratories of our collaborators before coming to ICAGEN's RTP laboratories, providing a natural transition for both scientist and science from academics to industry.

We are currently recruiting the best new scientists for three key positions:

Cell and Molecular Biology

As a scientist in this group, you will take a leading role in exploring ion channel subtypes involved in disease. You will participate in the cloning and expression of ion channels and in identifying subchannel targets for ion channel drugs. Specific experience using yeast expression systems is desirable.

Biochemistry

As a biochemist at ICAGEN, you will be involved in all phases of ion channel drug discovery including protein expression and purification, and the development of assays for the study of channel-compound interactions. As a key scientist with broad-ranging skills, you will work closely with the entire ICAGEN team.

Biophysics

A biophysicist at ICAGEN must be experienced in various electrophysiological and computational approaches to the study of ion channels in a variety of cell types. You will take a leading role in exploring the interactions of compounds with various channel gating states using both biophysical and computational methodologies.

Qualified applicants for the above positions must have a Ph.D. and direct experience in the research of ion channels. Individuals with postdoctoral experience are preferred.

ICAGEN offers a competitive compensation package including stock ownership, along with the professional challenge of a young and innovative company. The company's location provides access to a world-class scientific community, affordable housing, a mild climate, all within a beautiful part of the Carolina countryside. Resumes, including references, should be sent to: **Human Resources, ICAGEN, Inc., P.O. Box 14487, RTP, NC 27709**. An Equal Opportunity Employer.



ICAGEN Inc.
Ion Channel Advances

PRODUCT MANAGEMENT: MICROSCOPES

Edge Scientific Instrument Corporation seeks scientist/microscopist with a broad working knowledge of biomedical and industrial applications for research microscopes. Company sells a revolutionary 3D light microscope through experienced distributors. Position is based in L.A. and requires frequent travel for dealer and customer support. Edge will draw on your experiences in expanding the market for this and future microscope products. Forward resume to:



Edge Scientific Instrument Corp.
1055 West 7th Street
Suite 2500
Los Angeles, CA 90017

Carnegie Mellon University and the University of Pittsburgh Announce the Creation of the Center for the Neural Basis of Cognition

The Center is dedicated to the study of the neural basis of cognitive processes, including learning and memory, language and thought, perception, attention, and planning; to the study of the development of the neural substrate of these processes; to the study of disorders of these processes and their underlying neuropathology; and to the promotion of applications of the results of these studies to artificial intelligence, technology, and medicine. The Center will synthesize the disciplines of basic and clinical neuroscience, cognitive psychology, and computer science, combining neurobiological, behavioral, computational and brain imaging methods.

Faculty Openings in the Center

The Center seeks faculty and research scientists whose work relates to the mission stated above. Recruiting is beginning immediately, and will continue for several years. Appointments can be at any level and will be coordinated with one or more departments at either university.

Coordinating departments include Biological Sciences, Computer Science, and Psychology at Carnegie Mellon and the departments of Behavioral Neuroscience, Neurobiology, Neurology, Psychiatry and Psychology at the University of Pittsburgh. Other affiliations may be possible.

Candidates should send an application to either of the Co-Directors of the Center, listed below. The application should include a statement of interest indicating how the candidate's work fits the mission of the center and suggesting possible departmental affiliations, as well as a CV, copies of publications, and three letters of reference. Both universities are EEO/AA Employers.

James L. McClelland
Department of Psychology
Baker Hall 345-F
Carnegie Mellon University
Pittsburgh, PA 15213

Robert Y. Moore
Center for Neuroscience
Biomedical Science Tower 1656
University of Pittsburgh
Pittsburgh, PA 15261

FACULTY TENURE-TRACK POSITION

The University of Wisconsin-Madison

The School of Pharmacy at the University of Wisconsin-Madison invites applications for a full-time tenure track position, preferably at the Assistant Professor level, though other ranks will be considered, in the Division of Pharmaceutics. Candidates should be capable of developing an independent, aggressive, and fundamental program examining biological and physicochemical aspects relative to the field of drug delivery. The primary interest should be in generating new mechanistic knowledge, preferably at the molecular level. Candidates should hold the Ph.D. in pharmaceutics, or a related field with a strong biophysical or physical chemistry background, and should have relevant postdoctoral research experience. Teaching responsibilities will include undergraduate and graduate courses. Applications will be considered until May 1, 1994. Please send a complete curriculum vita with a description of research interests and proposed research, and names, addresses, and telephone numbers of at least three references to:

Dr. George Zografi
School of Pharmacy
University of Wisconsin
425 N. Charter Street
Madison, WI 53706-1515
Phone: (608) 262-2991
Fax: (608) 262-3397

The University of Wisconsin is an E.O.E. Unless confidentiality is requested in writing, information regarding the applicants must be released upon request. Finalists cannot be guaranteed confidentiality.

We focus on quality of life.

We're Allergan, a Fortune 500 company and a global leader in the development of specialty therapeutics for eye and skin care and neuromuscular disorders. As a member of our team, you will have the chance to make a difference in the lives of others by helping to advance the science of health care.

Allergan regularly has opportunities at all levels in the following areas:

- **Biological Sciences**
- **Biostatistics**
- **Clinical Research**
- **Organic Chemistry**
- **Regulatory Affairs**

Allergan will reward your skills with a generous salary and benefits package. For confidential consideration, please send your resume to:
**Allergan, Inc., Corporate Human Resources,
CODE: JS-Science, 2525 Dupont Drive, Irvine,
CA 92715.** An Equal Opportunity Employer.

Advancing the Science of Health Care.



THE UNIVERSITY OF CHICAGO IMMUNOLOGIST DEPARTMENT OF PATHOLOGY

The Department of Pathology at the University of Chicago seeks to recruit an outstanding experimental immunologist. We are committed to ongoing development in molecular immunology. We are seeking an outstanding individual to the immunology community whose expertise encompasses both cellular and molecular immunology. Existing related programs in the Dept. of Pathology include: molecular and cell biological aspects of antigen presentation; tumor immunology; T lymphocyte activation and regulation; and transplantation. The level of appointment, which is on the tenure track, will depend on the experience and qualifications of the applicant who is expected to demonstrate both significant accomplishments and outstanding promise. Applications must be received by May 1, 1994. Please send current curriculum vitae, bibliography and a brief statement indicating research interests and the names of three references to:

**Jeffrey Bluestone, Ph.D.
Professor, Department of Pathology
The University of Chicago
5841 S. Maryland Ave., MC 1089
Chicago, IL 60637**



**THE UNIVERSITY
OF CHICAGO**

An Affirmative Action Equal Opportunity Employer

National Institute of Mental Health
National Institutes of Health
Public Health Service

Director

Division of Intramural Research Programs

The National Institute of Mental Health invites nominations and application for the position of Director, Division of Intramural Research Programs (DIRP), located in Bethesda, Maryland. This program is the largest scientific research center in the world focused on mental health, mental illness, and behavioral and brain research. Its diverse research programs are conducted by approximately 950 employees in 24 different laboratories and clinical branches.

Responsibilities of the Director, DIRP, includes the overall management of all scientific, fiscal, and personnel resources. The Director is involved in planning and directing basic and clinical research, supervising the training of scientists, implementing national science policy, and administering and evaluating research programs.

Minimum qualification requirements include a degree of Doctor of Medicine, Doctor of Philosophy, Doctor of Osteopathy, or a bachelor's or higher degree in an academic field related to the health sciences, and progressively responsible experience in developing, administering, and evaluating biomedical research programs. Applicants must further meet established mandatory professional/technical and managerial/executive requirements and additional desirable qualifications.

The person selected for the position will receive a career appointment to the Senior Executive Service (SES) with an annual salary range of \$96,830 to \$120,594. Physicians may be eligible for a Physician's Comparability Allowance up to \$20,000 per annum. Alternately, this position may be filled through an appointment in the Public Health Service Commissioned Corps.

Further information about the position and Qualification requirements may be obtained by contacting Ms. Pat Middleton at (301) 443-9094. An Application for Federal Employment (SF-171), accompanied by a current curriculum vitae, bibliography, and three letters of reference should be submitted to Ms. Middleton at the Personnel Management Branch, National Institute of Mental Health, Parklawn Building, Room 15C12, 5600 Fishers Lane, Rockville, Maryland 20857. Completed applications (including the SF-171) must be postmarked by the closing date of the vacancy announcement, March 25, 1994.

Selection for this position will be based solely on merit, with no discrimination for nonmerit reasons such as race, color, religion, sex, national origin, politics, marital status, physical or mental handicap, age, or membership or nonmembership in an employee organization.

NIH is an Equal Opportunity Employer

POSITIONS OPEN

CHAIRPERSON DEPARTMENT OF PHARMACOLOGY School of Medicine Case Western Reserve University

Case Western Reserve University School of Medicine invites applications and nominations for the position of chairperson in the Department of Pharmacology. We seek a person with a distinguished research program in cellular and molecular approaches to pharmacology. The research area could encompass, but not be limited to, such fields as macromolecular interactions, structural biology or cell signaling. The School is particularly interested in maintaining a broad perspective in the future development of the department and offers excellent space and resources to developing an outstanding program. A letter of application and curriculum vitae should be submitted to: Antonio Scarpa, M.D., Ph.D., Chairman, Pharmacology Search Committee, School of Medicine, 10900 Euclid Avenue, Cleveland, OH 44106-4970. Case Western Reserve University is an Equal Opportunity/Affirmative Action Employer.

FACULTY POSITION IN AGING RESEARCH

The Division of Geriatric Medicine of St. Louis University School of Medicine and the St. Louis Veterans Administration (VA) Medical Center invite applications for a full-time research position studying biochemical mechanisms of aging and the diseases of aging. Ph.D. required and molecular biology experience helpful, but specific research area is open. Division has ongoing research in neurobiology, Alzheimer's disease, osteoporosis, anorexia, diabetes, and carcinogenesis. Appointment will be at VA Medical Center with joint appointment in Division of Geriatric Medicine and other basic science department. Academic rank is open and will be commensurate with experience and funding record. To apply, send curriculum vitae, statement of research interests, and names of three references to: Dr. H. J. Armbricht, Geriatric Center (11G-JB), St. Louis VA Medical Center, St. Louis, MO 63125. We are an Equal Opportunity/Affirmative Action Employer, M/F/H/V. Women and minorities are encouraged to apply.

BIOLOGISTS. Wabash College, a private liberal arts college, invites applications for two sabbatical leave replacement positions for the 1994/95 academic year. Appointments will begin July 1, 1994. Ph.D. required. Responsibilities for one position include teaching cell biology, an advanced course of one's choosing and participating in a team-taught introductory course. The teaching responsibilities for the second position are flexible, but a background in plant science is desirable. This person would offer an advanced course of his or her choosing each semester and participate in a team-taught introductory course. The opportunity to direct undergraduate research projects exists with both positions. We are eager to receive applications from a broad spectrum of individuals especially from women and members of minorities. *Wabash, a college for men, is an equal opportunity employer.* Applicants should submit curriculum vitae, three letters of recommendation and a statement of teaching and research interests to: Austin Brooks, Biology Department, Wabash College, P.O. Box 352, Crawfordsville, IN 47933 by March 7, 1994. Equal Opportunity Employer.

ACADEMIC OPHTHALMOLOGISTS/ INSTRUCTORS

The University of Nebraska College of Medicine, Department of Ophthalmology, is seeking one full-time academic ophthalmologist to serve as an instructor for the period July 1, 1994, through June 30, 1995. A retina specialist is desired. A strong commitment to resident and medical student teaching, as well as an interest in research, are essential. Requirements include completion of a satisfactory residency program and prior teaching experience. Send curriculum vitae to: Michael E. Yablonski, M.D., Ph.D., Professor and Chairman, University of Nebraska Medical Center, 600 South 42nd Street, Omaha, NE 68198-5540. Equal Opportunity/Affirmative Action Employer. Minorities and women are encouraged to apply.

POSITIONS OPEN

DIRECTOR, ENVIRONMENTAL SCIENCE AND ENGINEERING PROGRAMS UNIVERSITY OF TEXAS AT EL PASO

The University of Texas at El Paso (UTEP) invites applications and nominations for an experienced environmental scientist or engineer to provide leadership for its interdisciplinary research, outreach, and education programs. Initially the major focus of this newly-established position will be the development and successful implementation of new graduate environmental degree programs in conjunction with faculty and administrators in several colleges. Responsibilities include direction of an established environmental research, development and outreach Center which currently administers approximately \$4 million in federal and state funds, and the full integration of academic programs into the Center's activities. New initiatives will be supported by excellent existing facilities and strong research and education programs in participating departments. The successful candidate must qualify for appointment as Associate or Full Professor in a department in the College of Science or Engineering; show evidence of outstanding leadership capability in an academic setting; and have demonstrated ability to secure and direct externally funded programs. Situated in the largest metropolitan region on the U.S./Mexico border, UTEP provides doctoral, master's, and undergraduate programs to over 17,000 students. Applications will be accepted until the position is filled. Please send a letter summarizing your interest and capabilities, a detailed résumé and list of references to Dr. J. P. Sanford, Associate Vice President for Research and Graduate Studies, The University of Texas at El Paso, Administration Building Room 209, El Paso, TX 79968-0587. UTEP does not discriminate on the basis of race, color, national origin, sex, religion, age or disability in employment or the provision of services.

FACULTY POSITION IN GI RESEARCH

The Division of Pediatric GI/Nutrition, Children's Hospital, Medical University of South Carolina in Charleston, is seeking a basic research scientist with a doctoral degree and at least three years of experience. The successful candidate will run a laboratory studying the molecular basis for GI permeability during acute inflammation. Supervisory skills as well as firsthand knowledge of molecular biology, cell culture and protein characterization techniques are necessary.

Send curriculum vitae with references to: Robert D. Baker, M.D., Ph.D., Division of Pediatric GI/Nutrition, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425.

ENVIRONMENTAL SCIENCE

Portland State University seeks candidates for two **TENURE-TRACK POSITIONS** in the area of environmental sciences, one at the full or associate level and one at the assistant professor level. The successful candidates will also have partial appointments in Biology, Chemistry, Civil Engineering, Geography, Geology, or Physics and in the existing Environmental Sciences and Resources Ph.D. Program. Particular attention will be given to candidates with training and demonstrated experience in the analysis, description, monitoring and/or modeling of environmental systems. Duties will include developing and teaching core environmental science courses, curricular development at both the undergraduate and graduate levels, and basic or applied research. Applicants will be considered beginning March 1, 1994. Application must include a detailed résumé, four potential references, and a statement of scholarly interests and activities. Submit applications to: Roy Koch, Office of Graduate Studies, Portland State University, P.O. Box 751, Portland, OR 97207. Portland State University is an Equal Opportunity/Affirmative Action Employer and is committed to diversifying its work force. Minorities, women, and members of other protected groups are encouraged to apply.

POSTDOCTORATE, PLANT MOLECULAR GENETICS/SYSTEMATICS. Determine the phylogenetic relationships of junipers as part of interdisciplinary study of environmental, genetic, and ecophysiological characteristics. Qualifications: Ph.D., plus quantitative genetics, RFLP, PCR, sequencing, and cloning experience. Send summary of qualifications and résumé, and have 3 references send letters to: Dr. R.S. Nowak, EECB, University of Nevada Reno, 1000 Valley Road, Reno, NV 89512. Telephone: (702) 784-1656. nowak@unssun.scs.unr.edu. CLOSING DATE: March 15, 1994. University of Nevada Reno is an Equal Employment/Equal Opportunity Employer.

POSITIONS OPEN

BIOLOGY: Baldwin-Wallace College invites applications for a full-time **TENURE-TRACK POSITION** beginning September 1, 1994, to teach courses in immunology, biochemistry, microbiology, and general biology. All courses are at the undergraduate level. Candidates must have a Ph.D. Excellence in teaching is required and research activity that involves undergraduates is encouraged. Salary is dependent on qualifications. Baldwin-Wallace is a liberal arts-oriented college offering courses in the day, evening, and weekend at both the undergraduate level and Master's level in business and education. Located in a suburb of Cleveland, the College has a total enrollment of 4800 with a full-time day enrollment of 2600. Please send statement of teaching and research interests, curriculum vitae, official transcripts, and three letters of recommendation to: Dr. Stephen D. Hilliard, Chairperson, Biology Department, Baldwin-Wallace College, 275 Eastland Road, Berea, OH 44017-2088. Deadline for receipt of applications is March 30, 1994. *Minority and women candidates are especially urged to apply.* Baldwin-Wallace is an Equal Employment Opportunity/Affirmative Action Employer.

The Department of Biology at Northern Michigan University invites applications for an anticipated **TENURE-EARNING POSITION** that will begin in August 1994. The candidate should have a Ph.D. in Ecology or related field, research experience, and undergraduate teaching experience. Duties include undergraduate and Master's-level supervision of research and instruction in ecology and computer applications to biology. Applications will be received until the position is filled, screening for interviews will begin on March 1, 1994. Send letter of application, résumé, transcripts, and names, addresses and telephone numbers of three references to: Dr. Thomas G. Froiland, Department of Biology, Northern Michigan University, Marquette, MI 49855-5341; Telephone: 906-227-2310.

Northern Michigan University does not discriminate on the basis of race, color, national origin, gender, disability, or age in its programs or activities. Persons having civil rights inquiries may contact the Affirmative Action Office at (906) 227-2420. Persons having inquiries regarding Americans with Disabilities Act (ADA) may contact the ADA Coordinator at (906) 227-2970.

POSTDOCTORAL POSITION

The Biomedical Sciences Department has an immediate opening for an immunologist with an interest or potential interest in autoimmune disorders of the nervous system. The project involves the immunologic response to myelin proteolipid protein in experimental allergic encephalomyelitis (EAE) and in human demyelinating disorders, e.g., multiple sclerosis. A recent Ph.D. with training in T-cell biology and experience in T-cell cloning is preferred. The Shriver Center is located in suburban Boston, is affiliated with Harvard Medical School/Massachusetts General Hospital and offers an interactive, interdisciplinary environment. Please submit curriculum vitae, short summary of research plans and names of three references to: Dr. Marjorie Lees, E. K. Shriver Center, 200 Trapelo Road, Waltham, MA 02254. Equal Opportunity Employer.

POSTDOCTORAL POSITION available at the University of California, San Diego, to investigate the neuroanatomy of the mammalian gustatory system. Funded projects concern neurotrophism in the taste periphery, and the synaptic organization of the central taste system. Techniques include high voltage EM autoradiography, EM-immunocytochemistry, and neuronal tract tracing. Send curriculum vitae and a statement of research interests to: Mark C. Whitehead, Ph.D., Division of Anatomy, 0604, Department of Surgery, UCSD, La Jolla, CA 92093-0604.

POSTDOCTORAL POSITION available immediately to study the biology of cellular responses to hypoxia and the effects of pharmacologic modulating agents of the hypoxic response. Experience in gene expression or signal transduction is desirable. Studies will be conducted in tumor cell lines in vitro and in immunodeficient mice. Send curriculum vitae with references to: Dr. Peter O'Dwyer, c/o Human Resources Department, Fox Chase Cancer Center, 7701 Burholme Avenue, Philadelphia, PA 19111. Equal Opportunity Employer.

YALE UNIVERSITY SCHOOL OF MEDICINE AND YALE-NEW HAVEN HOSPITAL—Are searching for an individual to be Chair of the Department of Internal Medicine and Chief of the Medical Service, respectively. The Department's 237 full-time and 479 part-time faculty members form eleven sections: Cardiovascular Medicine, Digestive Diseases, Endocrinology and Metabolism, General Medicine, Hematology, Immunology, Infectious Diseases, Medical Oncology, Nephrology, Pulmonary and Critical Care, and Rheumatology. Candidates should submit their curriculum vitae to: **Richard L. Edelson, M.D., Chair, Department of Dermatology, Yale University School of Medicine, 501 LCI, 333 Cedar Street, P.O. Box 208059, New Haven, CT 06520-8059** by March 15, 1994. *Yale University is an Affirmative Action/Equal Opportunity Employer. Women and minority group members are encouraged to apply.*

DNA SEQUENCING & SYNTHESIS APPLICATIONS SPECIALIST

Do you have the technical expertise & "people skills" to support a state-of-the-art product line?

A challenging opportunity is currently available for a technically proficient and highly motivated individual to join a new team of professionals capable of providing comprehensive support services for our automated DNA sequencer and synthesis product lines.

The successful candidate will call on customers to familiarize them with equipment operation/maintenance as well as new and emerging techniques. The individual we seek must enjoy working with people and possess the presentation and communication skills required to conduct effective technical seminars and training courses, as well as interfacing with Marketing and Applications Development. This position, based at our New Jersey facility, will involve approximately 30% domestic travel.

To be considered, you must possess a B.S. in the Life Sciences (M.S./Ph.D. preferred), be computer literate in DOS, OS/2, and have at least 3 years of lab oriented experience. Familiarity with PCR and other molecular biology techniques is required. Should have used an automated DNA sequencer and must have in-depth manual sequencing exp.

Please outline how you believe you can contribute to this fast moving, rapidly growing team of professionals. Forward your resume which **MUST INCLUDE** salary history and requirements to: Human Resources, Dept. A.S., Pharmacia Biotech Inc., 800 Centennial Ave., Piscataway, NJ 08855-1327. We are an equal opportunity employer M/F/D/V.



**Pharmacia
Biotech**



DIRECTOR, PRECLINICAL BIOLOGY

This position will be responsible for managing a group of up to twenty (20) scientists with broad levels of experience and for successfully directing schedule driven research projects for determining the *in vivo* and *in vitro* function and therapeutic potential of gene medicines designed for the treatment of muscle wasting (cachexia), peripheral neuropathies, osteoporosis, hemophilia B, and other human diseases.

The successful candidate will have 7-10 years of experience in the development and characterization of biological models, preferably within a pharmaceutical or established biotechnology company, and a Ph.D., M.D., or D.V.M. with training in Molecular/Cell Biology, Pharmacology, Physiology or related field. Candidates should have a proven track record in the biological and pharmacological profiling of therapeutic agents and biotechnological products as demonstrated through publications and/or product development. Candidates should also have outstanding interpersonal skills and the ability to lead a research team working on multiple projects and clinical targets.

GENEMEDICINE, INC. is an emerging, new company developing controllable *in vivo* gene therapies. The company is backed by several of the most successful venture capital investors in biotechnology, has strong ties to the laboratories of its scientific founders at Baylor College of Medicine, and is located close to the Texas Medical Center -- the world's largest medical research facility. We are assembling teams of bright and highly motivated professionals to pioneer our scientific and clinical programs. We offer a highly competitive compensation package. For confidential consideration, please send your CV to: GENEMEDICINE, INC., Human Resources, Dept. FL, 8080 North Stadium Drive, Suite 2100, Houston, TX 77054

GENEMEDICINE, INC.

Senior Scientist/ Project Leader

Antifungal Research

Phytera, Inc., is seeking an experienced researcher to lead our antifungal drug discovery program. This senior-level research position requires a Ph.D. in Microbiology or a related discipline with a minimum of 5 years experience including a record of significant accomplishments in antifungal research.

As a key member of our research team you will apply your expertise in fungal biology and therapeutic targets to explore both established and innovative approaches to the discovery and development of clinically-useful antifungal agents. The successful candidate will have strong communication skills and the flexibility to work in a fast-paced entrepreneurial environment.

Phytera is committed to the discovery and development of new treatments for human diseases by exploring the chemical diversity of natural products derived from plant tissue culture. Our headquarters and new, purpose-built facilities in the Worcester, MA Biotech Park, are adjacent to the UMass Medical Center and within convenient driving distance to Boston. Phytera has additional R&D facilities located within the University of Sheffield, U.K.

We offer a competitive compensation package and the opportunity to contribute to the success of a vibrant young company in a positive, team-oriented environment. To apply, please send your C.V. to **Ms. Hilary Clayton, Phytera, Inc., One Innovation Drive, Worcester, MA 01605**. An equal opportunity employer. No phone calls, please.



PHYTERA



Cardiovascular Physiologist

Respect for life is what drives the professionals of Ciba-Geigy to discover, develop and manufacture innovative drug therapies that fulfill unmet medical needs around the world. These values also set the parameters for the responsible use of valuable resources in our experiments.

Our commitment to the future begins with responsible experimentation.

Working in our Cardiovascular Research area, your responsibilities will include surgical preparation of animals for *in vivo* cardiac/hemodynamic studies; completion of experimental protocols directed at evaluating drugs for the treatment of myocardial ischemia; automated data collection and analysis with a digital acquisition system; and performing *in vitro* analyses. To qualify, you must offer a BS/MS in Biomedical Engineering, Biology or Physiology, along with 1-3 years of relevant experience. An understanding of cardiovascular physiology/pharmacology; demonstrated background with anesthesia and cardiac surgery; and a knowledge of computers, spreadsheets and graphics packages to manage data, are all essential. Strong oral and written communication skills are important.

We offer a competitive salary and excellent benefits as well as ample room for personal and professional development. For confidential consideration, please send your resume, with salary history and requirements, to: **Staffing Center, Ciba-Geigy Corporation, Pharmaceuticals Division, Dept. 331, 556 Morris Avenue, Summit, New Jersey 07901.** We are an equal opportunity employer M/F/D/V.

Preparing for the future

ciba



The Gladstone Institute of Cardiovascular Disease,
University of California,
San Francisco

Postdoctoral positions available in the labs of:

Israel F. Charo, M.D., Ph.D.: Research on the role of monocyte/macrophages in early atherosclerosis. Current projects are focused on the recently cloned receptor for monocyte chemoattractant protein 1 (MCP-1) and related receptors in the rapidly emerging family of cytokines known as the chemokines. Methodology includes expression of receptors in *Xenopus* oocytes and mammalian cells to examine signaling pathways and ligand binding domains, as well as the development of transgenic mice. Experience in molecular biology, signal transduction, or transgenic mice is desirable.

Karl H. Weisgraber, Ph.D.: Studies on the effect of overexpression of human genes on lipoprotein metabolism in transgenic mice.

Stephen G. Young, M.D.: Research on the structure and function of apolipoprotein B (apo B). Characterization of recently developed transgenic mice expressing large amounts of human apo B, generation of mice with targeted mutations in the apo B gene, and investigation of the molecular mechanism of hypobetalipoproteinemia. Experience with transgenic mice and/or molecular biology techniques is desirable.

Candidates should possess an M.D. or Ph.D. in molecular biology or biochemistry. Competitive salary and benefits. Send C.V. and names of three references to: Postdoctoral Recruitment; Gladstone Institute of Cardiovascular Disease, UCSF; P.O. Box 419100; SF, CA 94141-9100. AA/EOE.



Avigen is an exciting new gene therapy company that is developing products to treat selected diseases using adeno-associated viral (AAV) vectors. The company believes that its gene delivery system represents a major advance in the clinical utility and commercialization of gene therapy. Avigen has career opportunities for creative, highly motivated individuals.

RESEARCH SCIENTISTS

Ph.D. or M.D. and Ph.D. with several years of postgraduate experience in the following areas:

Hematopoietic Stem Cell Biology

This individual will be responsible for conducting a major research effort to develop novel gene delivery vectors that target bone marrow. Applicants must have several years of research experience in hematopoiesis, bone marrow transplantation models, and molecular biology.

Virology

This individual will be responsible for developing Avigen's broad-based proprietary AAV vector technology for the treatment of viral infections. Preference is for applicants with research experience with HIV and hepatitis B viruses.

Tumor Biology/Immunology

This individual will be responsible for the application of Avigen's proprietary gene vectors to animal models of cancer. Preference is for applicants with previous industrial or academic experience directed toward the development of immune-based therapies for cancer.

RESEARCH ASSOCIATES

B.S. or M.Sc. with 2-5 years of industrial or academic experience in the following areas:

Mammalian Cell Culture

Molecular Biology

Protein Purification

Fluorescence Activated Cell Sorting

Avigen is an Equal Opportunity Employer. Submit resumes to: **Human Resources, Avigen Inc., 1201 Harbor Bay Parkway #1000, Alameda, CA 94502.**

AVIGEN

TRUDEAU INSTITUTE, INC.

A POSTDOCTORAL POSITION in IMMUNOLOGY is available for a person with training in cellular and/or molecular immunology to study basic immunology and the immune response to opportunistic infections, including tuberculosis. Future appointment to staff is possible depending on performance.

THE TRUDEAU INSTITUTE is a well-endowed, not-for-profit, basic research institute with modern facilities, up-to-date equipment, in-house animal production, and an international reputation for excellence. The Trudeau Institute is located on the shore of Saranac Lake, 8 miles from Lake Placid. Competitive salary and fringe benefits are offered and institute housing will be made available.

Applications consisting of a curriculum vitae, the names and addresses of three references should be addressed to:

Robert J. North, Ph.D., D.Sc.
Director
Trudeau Institute, Inc.
P.O. Box 59
Saranac Lake, NY 12983

TARGETED GENETICS

A Gene Therapy Company

Targeted Genetics Corporation (TGC) was established to develop and commercialize integrated gene therapy treatments for acquired and inherited diseases. Our company has established a leadership position in the field of gene therapy which we will maintain by providing cost-effective treatments for human disease.

TGC is currently evaluating its proprietary gene therapy technology in clinical trials for HIV disease. The company is also pursuing preclinical and clinical programs for the treatment of CMV disease, cystic fibrosis, cancer, Gaucher's disease and cardiovascular disorders.

TGC has assembled an experience team of scientists, research advisors and business professionals. The company recently complete construction of a 25,000 square foot facility in Seattle, Washington that houses a GMP laboratory for production of clinical grade materials, molecular biology and immunology laboratories, and administrative offices.

Targeted Genetics Corporation

1100 Olive Way, Suite 100
Seattle, WA 98101

Equal Opportunity Employer

THE WISTAR INSTITUTE invites applica- tions for Assistant Professor level positions in the following research programs:



We are an equal opportunity employer.

- **Developmental Biology** – We seek expertise in the development of the immune, nervous and cardiovascular systems, with emphasis in gene expression and homologous recombination.
- **Experimental Therapy** – We are looking for expertise in tumor immunotherapy or tumor gene therapy, with focus on brain tumors.
- **Structural Biology** – We are looking for expertise in crystallography and molecular modelling of molecules relevant in oncogenesis and gene expression.

The Wistar Institute is located on the University of Pennsylvania campus and is equipped with the latest biotechnology support facilities. Send curriculum vitae and the names of three references to: **Faculty Search Committee, THE WISTAR INSTITUTE, 36th & Spruce Streets, Philadelphia, PA 19104.**

Established Neuroscientist

The Department of Anatomy and Neurobiology at Colorado State University plans to add a faculty member with expertise in research at the molecular level in neurobiology. Expertise may vary. Areas of current interest in the Department include: real-time methods for monitoring neurobiological processes, *in vitro* analysis of neural signalling, molecular bases of neural function, and control of developmental events. This position is available at the associate or full professor level. An established history of successful graduate and postdoctoral training, innovative approaches to contemporary neurobiological problems, as well as successful federal funding are required. Applications will be accepted until March 15, 1994. The search may be extended if a suitable candidate is not identified. Send CV and names of three references to: **Chair, Search Committee, Department of Anatomy and Neurobiology, Colorado State University, Fort Collins, CO 80523. CSU is EEO/AA employer. E.O. Office: 314 Student Services Bldg., Fort Collins, CO 80523.**

Discover Treatments for Immunological Diseases

At ImmuLogic, our discoveries have allowed us to develop an advanced understanding of the events controlling the human immune system. Through research in immunology and pharmaceutical product development, we're focused on developing therapeutics for immunologically-mediated diseases. At our state-of-the-art research facility in Palo Alto, California, we have the following openings:

CELLULAR IMMUNOLOGIST

Will participate in a program focused on the isolation of novel human autoantigens identified by T cells, and will investigate the events leading up to T cell activation in human disease. This program will require the use of transgenic models of human disease, the use of novel and established techniques, as well as interaction with collaborators and consultants. Requirements: Ph.D. in Immunology or related field. Minimum of two years relevant postdoctoral experience in T cell immunology, preferably human, and the desire to apply basic research in immunology to the development of antigen-specific therapeutics for immunologically-mediated diseases.

SYNTHETIC ORGANIC CHEMIST

As a team member working with cellular immunologists, this individual will investigate the immunological mechanism of T cell recognition by designing and synthesizing a variety of low molecular weight organic compounds, haptens and peptides. Requirements: MS in Chemistry with three years of relevant experience in synthetic organic chemistry.

ImmuLogic offers a competitive salary and an excellent benefits package, as well as equity participation through an incentive stock program. Please send your curriculum vitae to: **Human Resources, ImmuLogic Pharmaceutical Corporation, 855 California Avenue, Palo Alto, CA 94304.** We are an Equal Opportunity Employer.

IMMULOGIC
Pharmaceutical Corporation
The clear relationship between business and science

POSITIONS OPEN

FOOD BIOPOLYMERS— ASSISTANT PROFESSOR

THE DEPARTMENT OF FOOD SCIENCE, UNIVERSITY OF MASSACHUSETTS/AMHERST, invites applications from qualified individuals to fill a tenure-track position approximately two-thirds research, one-third teaching. The successful candidate will develop a research program in the area of food biopolymers and their properties, teach Food Analysis as well as other undergraduate and graduate courses, advise students, and support departmental initiatives. A Ph.D. in Food Science, the chemical or physical sciences, or engineering is required. Further evidence of scholarly accomplishments is desirable; an ability to sustain a research program with external funding is expected. Salary is competitive and commensurate with qualifications and experience. Priority will be given to applications received by April 15, 1994, but the search will remain open until the position is filled. Applicants should submit a letter of application, transcripts, résumé, and the names, addresses and telephone numbers of four references to: Dr. P. Chinachoti, Chair, Search Committee, Department of Food Science, University of Massachusetts, Amherst, MA 01003-1410. *The University of Massachusetts is an Affirmative Action/Equal Opportunity Institution.*

ANATOMIST

The Department of Health Sciences at East Tennessee State University seeks applicants for a tenure-track position at the ASSISTANT/ASSOCIATE PROFESSOR level opening in August 1994. The position requires teaching undergraduate courses in Introductory Anatomy and Physiology and Human Anatomy. Development of a fundable research program is expected. Ph.D. preferred; however, candidates holding other graduate degrees with extensive university-level teaching experience in anatomy may be considered. Screening of applicants will begin in March 1994. Salary and rank will depend on qualifications and experience. Send curriculum vitae, a description of research interest, and the names of three references to: Dr. Michael T. Gallagher, Professor and Chair, East Tennessee State University, Department of Health Sciences, P.O. Box 70,673, Johnson City, TN 37614-0673. *East Tennessee State University is an Equal Opportunity/Affirmative Action Employer.*

Carolinas Medical Center, an 843-bed academic medical center is seeking a RESEARCH SCIENTIST/POSTDOCTORAL FELLOW to undertake research projects related to molecular biology and human genetics. Doctoral degree and experience in molecular biology related to medicine is required. Research will be carried out at the newly established Cannon Research Center on the campus of Carolinas Medical Center under the supervision of Dr. R. Thomas Taggart. For information, please send a copy of your curriculum vitae and three references to: Human Resources, The Charlotte-Mecklenburg Hospital Authority, P.O. Box 32861, Charlotte, NC 28232. *Equal Opportunity Employer.*

2-YEAR POSTDOCTORAL POSITION IN FOREST ECOLOGY

A postdoctoral position (GS-11/12 depending on qualifications) is available immediately to study pools and flux of litter and coarse woody debris in Lake States' forest ecosystems under both disturbed and undisturbed management regimes. The incumbent will also analyze field data on decay rates of coarse woody debris and will initiate field measurements to reveal critical knowledge gaps to identify ecosystems significantly impacted by management disturbances. These may in turn affect soil carbon processes and long-term site impacts. This research will define sites needed for detailed long-term soil carbon processes research. Send curriculum vitae by March 1, 1994, to: Dr. Donald Perala, Project Leader, USDA Forest Service, North Central Forest Experiment Station, Forestry Sciences Laboratory, 1831 Highway 169 East, Grand Rapids, MN 55744. Telephone: 218-326-7113.

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately to conduct research in the general area of cancer experimental therapeutics with particular emphasis on molecular mechanisms of taxol sensitivity and resistance. Position would involve work on transfection and expression of genes that regulate apoptosis in human bone marrow and cancer cells. Send curriculum vitae and names of three references to: Kapil N. Bhalla, M.D., Department of Medicine, Division of Hematology/Oncology, 903CSB, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425.

POSTDOCTORAL ASSOCIATE

POSTDOCTORAL POSITION available June 1994 to study signal transduction in the epithelial cell tight junction. Molecular biology, cell culture, immunotechniques and microscopy experience desirable. To apply please send curriculum vitae and references to: James M. Anderson, M.D., Ph.D., Internal Medicine and Cell Biology, 1080 LMP, Yale School of Medicine, 333 Cedar Street, New Haven, CT 06520-8019.

POSTDOCTORAL POSITION available to study protein-DNA interaction in DNA replication and transcription, using viral ori-P as an example. Applicant should have a Ph.D. and strong background in molecular biology. Technical expertise in gene cloning and expression are prerequisites. Interested individuals should send curriculum vitae and name and addresses of three referees to: Dr. Meihan Nonoyama, Tampa Bay Research Institute, 10900 Roosevelt Boulevard, St. Petersburg, FL 33716.

ECOSYSTEMS ECOLOGY: POSTDOCTORAL and RA POSITIONS (3-year) available April 1994 to study carbon and nutrient cycling responsible for reduced productivity with forest age on rapidly growing Eucalypt plantation in Hawaii. Qualifications: Ph.D. in ecology/ecophysiology, experience in field gas exchange measurement and modeling (Postdoctoral); M.S. in field ecology (RA). Please send letter of interest, curriculum vitae, and names of three referees to: Dr. James Fownes, Department of Agronomy and Soil Science, 1910 East West Road, Honolulu, HI 96822.

POSTDOCTORAL POSITION. Physiology of extrastriate visual cortex. The relationship between the physiology of extrastriate cortex and visual perception is being studied in the alert monkey preparation. The ideal candidate would have experience with physiology or vision, and be comfortable around computers. Please send curriculum vitae and references to: Dr. Kenneth H. Britten, Center for Neuroscience, 1544 Newton Court, Davis, CA 95616. Telephone: (916) 754-5080, FAX: (916) 757-8827. *The University of California is an Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS: Two available for molecular biologists interested in (a) role of insulin-like growth factor binding proteins and (b) serine protease:serpin balance in neural development, plasticity and degenerative diseases. Experience in PCR, RNAase protection, *in vitro* transcription and non-radioactive probes desired. Send curriculum vitae, letter of interest and 3 letters of recommendation to: Dr. Barry W. Festoff, Director, Neurobiology Research Lab (151), Kansas University/VA Medical Center, 4801 Linwood Boulevard, Kansas City, MO 64128. FAX: (816) 861-1110.

POSTDOCTORAL POSITION, PROTEIN NMR SPECTROSCOPY. A postdoctoral position is available immediately to study the structures and interactions of calcium-binding proteins and peptides by solution NMR spectroscopy. Applicants should have experience with multi-dimensional NMR techniques including the application of pulse techniques, assignment of spectra and analysis for three-dimensional structure determination. Experience in molecular biology would also be an excellent asset. Equipment in our facility includes a three-channel Varian Unity 500 MHz NMR spectrometer, Sun workstations and several Silicon Graphics workstations. Please send curriculum vitae, two letters of reference and a recent reprint to: Dr. G. S. Shaw, Department of Biochemistry, University of Western Ontario, London, Ontario, Canada, N6A 5C1.

POSITIONS OPEN

POSTDOCTORAL POSITION

Available immediately to study gene regulation and signal transduction by protein phosphatases (*Oncogene* 8, 433). Good experience in molecular biology (cloning, library screening) necessary. Send curriculum vitae and three letters of recommendation to: Axel Schönthal, University of Southern California Medical School, HMR 405, 2011 Zonal Avenue, Los Angeles, CA 90033-1034. FAX: 213 342 1721.

Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION—University of California, San Francisco. Opportunity available to study gene expression/cell-specific transcription in the endocrine pancreas, including metabolic regulation of transcription, transcription factor cloning, and transgenic knock-out experiments. Please send curriculum vitae, names of three references and statement of research interests to: Michael German, M.D., Hormone Research Institute, UCSF, Box 0534, San Francisco, CA 94143-0534. FAX: (415) 731-3612. *UCSF is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

MOLECULAR BIOLOGY OF AGING POSTDOCTORAL POSITIONS

NIH-supported training positions currently are available to study the molecular biology of aging in the Department of Cellular and Structural Biology at the University of Texas Health Science Center at San Antonio. Successful candidates will have the opportunity to work with any one of the faculty members, whose research interests range from characterization of transacting proteins to gene regulation in transgenic mice. Applicants must be U.S. citizens, noncitizen nationals or permanent residents at the time of applications. Interested individuals should write to: Barbara H. Bowman, Ph.D., Professor and Chair, Department of Cellular and Structural Biology, The University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, TX 78284-7762. Training Faculty: G. S. Adrian, B. H. Bowman, I. L. Cameron, B. Chatterjee, J. M. Dubinsky, P. Jagadeeswaran, R. J. Klebe, E. B. Kraig, R. J. Leach, E. Y. H. P. Lee, W. H. Lee, W. W. Morgan, S. L. Naylor, J. F. Nelson, R. J. Reiter, A. G. Richardson, A. K. Roy, A. Y. Sakaguchi, C. A. Walter, and F. Yang. *The University of Texas Health Science Center at San Antonio is an Equal Employment Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION: BRAIN TUMOR GENETICS

Position available immediately to work on glioma molecular genetics. The long-term goal will be to develop a program for gene therapy. Ph.D. in molecular biology or related field required. Send curriculum vitae with names of two referees to: Dr. Peter J. Hahn, Ph.D. or Dr. Jeffrey A. Winfield, M.D., Ph.D., State University of New York Health Science Center, 750 East Adams Street, Syracuse, NY 13210. *SUNY-HSC is an Affirmative Action/Equal Employment Opportunity/ADA Employer.*

POSTDOCTORAL FELLOW

Applications are invited for a POSTDOCTORAL FELLOWSHIP in an active molecular biology laboratory investigating the mechanism of growth hormone action using *in vitro* and *in vivo* models. Candidates must have a Ph.D. in molecular biology, biochemistry, or physiology/pharmacology-related field. Position available immediately. Please send curriculum vitae and three references to: Dr. John Kopchick, Ohio University, Edison Biotechnology Institute, Wilson Hall/West Green, Athens, OH 45701. Application deadline: March 1, 1994. *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL FELLOW THE LOVEFACE INSTITUTES

The Lovelace Institutes has a POSTDOCTORAL FELLOW for one year, renewable for second year, available immediately to study cellular effects of ultraviolet light, with emphasis on signal transduction pathways. The successful candidate will interact with scientists in several programs. Strong background in biochemistry, cell biology, or molecular biology preferred. Send curriculum vitae and names of three references to: Ms. Judy Coalson, Director of Human Resources, The Lovelace Institutes, IBAMR, 2425 Ridgcrest Drive SE, Albuquerque, NM 87108. *Equal Opportunity Employer.*

U. S. DEPARTMENT OF ENERGY

POSTGRADUATE RESEARCH PROGRAMS

Human Genome	Global Change
Toxicology	Engineering
Fossil Energy	Physical Sciences
Hazardous Wastes	Environmental Sciences
Fusion Energy	Life Sciences
Computer Sciences	Risk Analysis

- Research at national laboratories
- Stipends \$22,200 - \$55,000 depending on degree, program, research area
- Recent graduate degree
- U.S. citizenship or PRA status may be required

Information and applications:

Postgraduate Research Programs
Science/Engineering Education Division
Oak Ridge Institute for Science and Education
P.O. Box 117
Oak Ridge, TN 37831-0117
(615) 576-7385

VICE PRESIDENT Of RESEARCH



Cadus Pharmaceutical Corporation

is focused on the
discovery of novel
drugs which
regulate G
protein-mediated
signalling
pathways. Cadus
is applying its
target driven
discovery
technology in the
areas of
inflammation,
cardiovascular
and neurological
disorders.

We are currently seeking a creative articulate hands-on research leader who is capable and motivated to help build a successful drug discovery program.

The individual we seek will have a Ph.D. and/or M.D. in a biological, chemical, or medically related discipline such as molecular or cell biology, biochemistry or enzymology. A minimum of 10 years of experience in the management of multi-disciplined research and development functions mandatory. A solid understanding of research strategy and drug discovery process essential. A track record that includes successful management of research programs resulting in products taken to the IND stage is preferred.

We offer competitive salaries and benefits. Send CV to HR Department, VP Search, Cadus Pharmaceutical Corporation, 180 Varick St., 9th Floor, New York, New York 10014.

Cadus is an equal opportunity employer.

Research Your Career At Our

BIOSCIENCE JOB FAIRS!



**LIFE SCIENCE
ASSOCIATES**

"The Nation's BioExpo Leaders"

Don't miss any of our 1994 BioExpo Career Events! Meet directly with hiring managers from the nation's best biotech and pharmaceutical firms.

March 24-25 **Boston**
May 9 **San Francisco**
June 9 **San Diego**

August 18 **Philadelphia**
October 27 **San Francisco**

Our clients include...

Amgen	Genetics	Pfizer
Biogen	Institute	Synergen
Baxter Biotech	Liposome	Syntex
Cephalon	Technology	Upjohn
Genentech	Miles, Inc.	Wyeth Ayerst
Genencor		and many others!

To interview directly at events or have your resume distributed at selected fairs, send one copy of your CV/resume to: LSA/Career Expo, Dept S, 2100 Embarcadero, Suite 101, Oakland, California 94606. You'll receive detailed information on how to participate. Companies interested in recruiting call (510) 436-3976 for registration information.

Ph.D. Atherosclerosis Research

Wyeth-Ayerst Research, a division of American Home Products Corporation, is seeking an individual to join our Cardiovascular discovery team focused on Atherosclerosis research located in Princeton, NJ.

As a member of the Atherosclerosis group, you will have opportunities to make significant contributions to drug discovery and target selection related to the processes of atherosclerotic lesion formation, including those related to lipoprotein metabolism and the immune response. This position will involve developing protocols in vivo and in cultured cells, with participation in ongoing and future programs.

Requirements include a Ph.D., with post-doctoral experience in the atherosclerosis research area, expertise in biochemistry and molecular biology techniques, and a demonstrated ability to successfully conduct independent research.

Wyeth-Ayerst offers an excellent compensation and benefits package in a highly professional environment. Please respond by sending your resume with salary requirements to: **Wyeth-Ayerst Research, Human Resources, Position #707, CN 8000, Princeton, NJ 08543-8000.** Equal Opportunity Employer, M/F/D/V.

**WYETH
AYERST**

Leading The Way for a Healthier World

POSITIONS OPEN

POSTDOCTORAL POSITION in lung toxicology/cell biology available immediately to study cellular and subcellular events involved in the inflammatory and permeability changes in the airways following exposure to air pollutants. The studies utilize innovative *in vivo* and *in vitro* approaches to examine biological effects. Participation in studies aimed at analyzing cytokines, cell adhesion molecules, cytoskeleton and epithelial injury is expected. Experience can be drawn from immunocytochemical, morphological and biochemical procedures. This position is funded by a grant from NIEHS, with a starting stipend of \$25,000. Send curriculum vitae and names of three references to: **Deepak K. Bhalla, Ph.D., Department of Community and Environmental Medicine, University of California, Irvine, Irvine, CA 92717-1825. FAX: (714) 856-4763; Telephone: (714) 856-4761. UCI: Rooted in education, enriched by diversity.**

U.S. DEPARTMENT OF AGRICULTURE SCIENCE FELLOW POSITION IN MOLECULAR BIOLOGY WITH D.V.M. AND/OR Ph.D.

The U.S. Department of Agriculture, Animal and Plant Health Inspection Service announces a unique scientific fellowship dedicated to recombinant expression and utilization of diagnostically useful proteins derived from animal disease pathogens of international importance.

Requirements: Candidate will have competence in all standard molecular biological techniques of nucleic acid and protein analysis and specific experience with bacterial, insect, yeast, and/or mammalian gene expression systems. Outstanding candidate will have a D.V.M. and/or Ph.D. degree in the biological sciences with specific experience in recombinant protein expression.

Work Environment: The science fellow will work with teams of classical and molecularly oriented animal health professionals at USDA's National Veterinary Services Laboratories located at Orient Point, New York and Ames, Iowa. World class facilities, equipment, and support will be provided, as will the opportunity for interaction with USDA's Agricultural Research personnel and nearby university scientists at both locations. Publication will be supported and expected.

Position Tenure: Position funded for 2 years with possibility extending additional 2 years.

Application Information: Call (612) 370-2200 for Announcement #AG-VS-062 and necessary application forms. Applications must be postmarked by March 18, 1994. For general information on the Science Fellows Program call 1-800-762-2738. *U.S. Citizenship is REQUIRED. The Federal Government is an Equal Opportunity Employer.*

POSTGRADUATE RESEARCH POSITIONS at EPA's Risk Reduction Engineering Laboratory in Cincinnati. Several positions available in various research areas including environmental synthetic chemistry, technology for cleaning up hazardous waste sites, hydrofracturing, *in situ* biochemical treatment of soils/wastes, and speciation of metals in soils and wastes. Other research areas also available. A degree within three years of starting an appointment is preferred. U.S. citizenship or permanent resident alien status is required. Stipend levels vary depending on degree level and research area. For additional information on each project, including degree level required: Postgraduate Research Program/RREL, Science Engineering Education Division, Oak Ridge Institute for Science and Education, P.O. Box 117, Oak Ridge, TN 37831-0117. Telephone: (615) 576-3456.

Anticipated POSTDOCTORAL RESEARCHER (Molecular Evolution/2 Positions)

Two POSTDOCTORAL RESEARCHER positions in molecular evolution are available July 1, 1994, "Pending Final Approval," one at Louisiana State University (LSU) and one at University of Southwestern Louisiana (USL). Interested persons who will have completed the Ph.D. by July 1, 1994, should contact: F. Sheldon, Museum of Natural Science, Louisiana State University, Baton Rouge, LA 70803; (E-mail: fsheld@lsuvm.sccc.lsu.edu), or J. Neigel, Department of Biology, Box 42451, University of Southwestern Louisiana, Lafayette, LA 70504; (E-mail: jen6441@ucs.usl.edu) to receive application information. Applications will be accepted until March 18, 1994, or until suitable applicants are found. *LSU IS AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER.*

POSITIONS OPEN

POSTDOCTORAL FELLOWSHIP—Merck Research Laboratories, a leader in pharmaceutical research, has an immediate postdoctoral fellowship opening in protein crystallography. The successful candidate must be a recent Ph.D. graduate or someone expecting a Ph.D. in the very near future with research expertise in X-ray crystallography and protein crystallization. The candidate is expected to be able to solve crystal structures of macromolecules utilizing modern technology. Facilities include a biochemistry wet lab and an X-ray diffraction lab, 2 Rigaku rotating anodes, RAXIS-II imaging systems, Silicon/Crimson graphics systems, and an ICN robotic crystallization machine. Computer supporting system includes VAX clusters and a CRAY YMP supercomputer. Excellent salary and benefit programs accompany this position at our modern research facilities located 25 miles northwest of Philadelphia. Please send curriculum vitae with cover letter to: **Personnel Manager, Ad #D-3, MRL Human Resources WP42-2, Merck Research Laboratories, P.O. Box 4, West Point, PA 19486. Equal Employment Opportunity/Affirmative Action/Veterans/Employer.**

MOLECULAR BIOLOGY

POSTDOCTORAL RESEARCH ASSOCIATE to study the regulation of gene expression during male germ cell differentiation. Projects include, but are not limited to, RNA-protein interactions that control translation of stored RNA's and the roles of the nuclear matrix and cytoskeleton in mRNA regulation. Background in molecular genetics desirable. Send curriculum vitae and names of two references to: **Norman B. Hecht, Biology Department, Tufts University, Medford, MA 02155; FAX: (617) 627-3805.**

POSTDOCTORAL RESEARCH POSITION: Exciting opportunity for Ph.D. in biological sciences to conduct research on the pathogenesis of chronic pulmonary hypertension. Particular emphasis on molecular mechanisms of vascular changes assessed by physiologic, immunohistochemical and molecular biological techniques. Submit curriculum vitae, summary of current research interests and 3 letters of recommendation to: **Dr. Barbara Meyrick, Center for Lung Research, Vanderbilt University Medical Center, MCN B-1308, Nashville, TN 37232-2650.**

AVIAN ECOLOGIST

RESEARCH ASSOCIATE, 1 May 1994 to 30 September 1996. \$21,000-\$25,000 per year. Supervise large field crew working on a wide variety of issues at remote (tent-living) sites at high elevation in Arizona during summers. Design own research. During academic year, conduct overview analyses and management of large, collaborative data set. Record of aggressive publishing, willingness to work long hours, familiarity with database management, statistical analyses, avian literature, and avian field research given preference. By 10 March 1994, please send letter of interest, transcripts, curriculum vitae, description of experience and career goals to: **Thomas E. Martin, Montana Cooperative Wildlife Research Unit, University of Montana, Missoula, MT 59812. Telephone: 406-243-5372.**

RESEARCH ASSISTANT— BONE MARROW TRANSPLANT/ CANCER RESEARCH

CHOC, a 192-bed acute pediatric care facility now has a full-time day position available. Requires three or more years of research in immunology, including extensive knowledge in Bone Marrow Transplant biology, tissue culture, immunofluorescence, and immune function. Thorough knowledge of monoclonal antibody staining and sorting techniques. Please submit résumé to: **Children's Hospital of Orange County, 455 S. Main Street, P.O. Box 5700, Orange, CA 92668, Attention: Personnel.**

RESEARCH SCIENTIST

Position is immediately available to study the role and effects of HIV-1 and B cell lymphokines. Specific requirements include strong background in molecular biology and cellular immunology or HIV-1. Send résumé, names and addresses of three references and salary requirements to:

**David Benjamin, M.D.
1232 James Cancer Hospital and Research Institute
The Ohio State University Hospitals
300 West 10th Avenue
Columbus, OH 43210-1228
Telephone: (614) 293-3716; FAX: (614) 293-3112**

POSITIONS OPEN

RESEARCH POSITION IN FISH PHYSIOLOGY/BEHAVIOR. Physiologist needed to conduct physiological and behavioral investigation of olfactory function in sea lamprey. Ph.D. in Zoology or related field, or Master's degree with experience, is required. Experience in electrophysiological recording desirable. Send curriculum vitae, transcript, and names of three references by March 15, 1994, to: **P. W. Sorensen, University of Minnesota, 200 Hodson Hall, 1980 Folwell Avenue, St. Paul, MN 55108-6124. The University of Minnesota is an Equal Opportunity Educator and Employer.**

FOUR RESEARCH ASSOCIATE positions are currently available in the areas of (1) human genome mapping, (2) synthesis of ene-diyne DNA cleaving agents, (3) free energy perturbation (FEP)/molecular dynamics simulations (MDS), and (4) *in vitro* toxicology. Candidates should have a Ph.D. degree in one of the above fields (molecular biology, organic chemistry, physical chemistry, physical chemistry/biophysics or environmental toxicology). Interested applicants should submit a letter stating their specific interests, curriculum vitae and names of three references by February 28, 1994, to: **Juarine Stewart, Ph.D., RCMI Program, Clark Atlanta University, James P. Brawley Drive at Fair Street, SW, Atlanta, GA 30314. CAU is an Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL/ASSOCIATE RESEARCH SCIENTIST position available for a Ph.D. to study the molecular biology of parathyroid hormone-related protein (PTHrP) receptors. Experience with molecular biology and recombinant DNA techniques is required. Salary commensurate with experience. Investigator-initiated independent grant funding also encouraged, but not required. Please send letter describing research interests, curriculum vitae, and names of three references to: **John J. Orloff, M.D., FMP 1, Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06510. Yale is an Affirmative Action/Equal Opportunity Employer.**

HEALTH AND ENVIRONMENTAL SCIENTISTS

Sciences International, Inc., headquartered in the Washington, D.C., metropolitan area with an office in Washington State, is seeking experts in the following: **Risk Assessment/Toxicology:** senior-level Board-certified toxicologist to manage large-scale projects; mid-level staff to support risk assessment and toxicological evaluations. **Ecological Risk Assessment:** senior and mid-level staff to support terrestrial and aquatic risk assessment activities. Please send résumé to: **Sciences International, Inc., King Street Station, 1800 Diagonal Road, Suite 500, Alexandria, VA 22314. AN EQUAL OPPORTUNITY EMPLOYER.**

SENIOR SCIENTIST

Individual to head bone research and development program that will assess safety and efficacy of bone allograft products and explore new biotechnologies for bone formation that may lead to new/improved bone/cartilage repair products. Position requires Ph.D. with 5 to 10 years of experience in bone/cartilage research. Send curriculum vitae, selected publications and 3 references to: **Dr. William Drohan, HOLLAND LABORATORY, American Red Cross, 15601 Crabbs Branch Way, Rockville, MD 20855. FAX: (301) 738-0553. Equal Opportunity Employer, M/F/D/V.**

GREAT LAKES CENTER RESEARCH SCIENTISTS/SPECIALISTS

Fisheries Acoustics: experience in fisheries acoustics/electrical engineering to use underwater acoustics to assess abundances and distributions of fishes in the Great Lakes and Chesapeake Bay. **Spatial Modeling:** use ecological modeling/geographic information systems to study spatial ecology and predator/prey relationships of fishes. **Fish Ecology:** conduct laboratory experiments on fish growth and bioenergetics. M.S. or Ph.D. degree required for these grant-supported positions. Send résumé and 3 references to: **Stephen B. Brandt, Director, Great Lakes Center, SUNY College at Buffalo, 1300 Elmwood Avenue, Buffalo, NY 14222 by 7 March 1994. An Equal Opportunity/Affirmative Action Employer.**

Amgen Inc., a global leader in the biotechnology industry, currently has a career opportunity for the following professional:

RESEARCH ASSOCIATE PROTEIN FORMULATION

Qualified candidate must have a BA/BS or MS degree in Chemistry, Biochemistry or a related field such as protein or analytical chemistry, as well as experience or interest in protein characterization. Experience in one or more of the following protein characterization methods is highly desirable: electrophoresis (SDS-PAGE, IEF, Western blotting), HPLC (reverse phase, ion-exchange and size exclusion), radiolabelling and UV/Vis spectroscopy. 1-3 years of industrial experience is preferred.

At Amgen, our staff plays an integral role in maintaining the highest of standards and product excellence. We offer a highly competitive compensation and benefits package. If you're interested in this position, please FAX OR mail your resume to: **FAX: (805) 447-1985, Amgen Inc., Staffing, Job Code OA-SC-EG-001, Amgen Center, Thousand Oaks, CA 91320-1789.** For additional information regarding Amgen's recruitment process, please call (805) 447-4150. Please, principals only.

AMGEN

EEO-Affirmative Action employer. M/F/D/V.

TOXICOLOGY

Study Director

SmithKline Beecham, a world leader in pharmaceutical research, has an opportunity for an experienced scientist with a background in Toxicology to join us as a Study Director within our Toxicology Department.

The scientist will assist in the design and conduct of preclinical safety/toxicology studies as part of the drug development process. This position requires a BS or MS in Toxicology or related sciences, and eligibility for board certification. Four to seven years experience in managing the conduct of safety studies under the FDA's Good Laboratory Practices regulations is essential. The ideal candidate will have served as Study Director on safety studies in a variety of species, ranging in length up to 2-years duration, and will be able with minimal management oversight, to supervise and/or coordinate Toxicology studies with an emphasis on detection, evaluation and reporting of drug-induced toxicity.

SmithKline Beecham offers a competitive compensation and benefits package. For confidential consideration, please forward your resume to: SmithKline Beecham Pharmaceuticals, Sr. Employment Administrator, #M104, PO Box 1539, King of Prussia, PA 19406-0939. We are an Equal Opportunity Employer, M/F/D/V.



SmithKline Beecham
Pharmaceuticals

Challenging the natural limits.

Imagine The Possibilities

At Berlex, we've been building an impressive team with some of the finest talent in the pharmaceutical industry. As we continue to pursue new possibilities in Oncology and Cardiovascular research, we're seeking the following PhD-level scientists to contribute to ongoing research programs within Berlex as well as throughout Schering AG. If you've been looking to join forces with an internationally recognized pharmaceutical team, imagine building your career with us at our new facility in Richmond, California.

RESEARCH SCIENTISTS Molecular Biology

You will supervise research within our Molecular Biology Department, conducting bench research and conferring with other Berlex scientists to best apply technical resources to ongoing and future research projects. Your academic credentials should be supported by a strong understanding of molecular biology in addition to 2-6 years of postdoctoral experience demonstrating skills in one or more of the following areas: eukaryotic/prokaryotic expression systems and transcriptional control, and PCR applications to cloning and sequencing technologies, as well as quantitative analyses. Experience in mammalian cell culture and transfection (stable and transient) and cDNA library construction would be a plus. Effective interpersonal skills and the ability to handle the diverse demands on the Molecular Biology Department are a must. Dept. B93-032

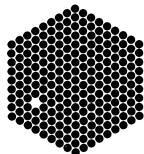
SENIOR SCIENTIST Cell Biology

You will use your state-of-the-art training in cell biology along with your knowledge of molecular biology to study endothelial and smooth muscle cell functions during vascular injury and inflammation in order to discover novel molecular mechanisms of vascular diseases. You should have a good understanding of vascular biology and pathobiology to include specific expertise and/or an interest in arteriosclerosis. Knowledge of cell-to-cell interactions and an established track record of innovative thinking and productivity are essential to this team-oriented position. Dept. B93-026

As a U.S. subsidiary of an international Fortune 500 company, we offer a highly attractive salary and a full complement of benefits, including relocation assistance to our new 53-acre campus facility. For consideration, please send your CV/resume indicating the department corresponding with the position of your interest to: **BERLEX, HR EMPLOYMENT, 15049 SAN PABLO AVE., RICHMOND, CA 94804-0099.** EOE

BERLEX

The Best Is Yet To Come



EMBL

HEAD OF THE EUROPEAN BIOINFORMATICS INSTITUTE (EBI) THE EUROPEAN MOLECULAR BIOLOGY LABORATORY

The EBI, an Outstation of EMBL, is being established on the Genome Campus at Hinxton Hall, Cambridge, UK. Its mission includes service and research in bioinformatics, and the Institute will have programmes in both service and research. The Research Programme will perform both fundamental and service-oriented research. The Service Programme is of central importance; it will incorporate and extend the mandate of the EMBL Data Library, and will continue to serve the bioinformatics needs of the European academic and industrial research community, and other users world-wide by:

- building nucleic acid and protein databases
- organizing advanced training courses
- integrating biological data from diverse sources, including sequence, structure, genetic and physical mapping information
- validating appropriate software tools
- co-operating with other data centres throughout the world, and
- working closely with the European users' network, EMBnet

EMBL invites applications for the post of Head of EBI, who will have overall responsibility for organizing and directing the Outstation, being directly responsible to the Director General of EMBL. In particular, the promotion of synergistic relationships between research and service activities will be crucial. The Head of the EBI will be expected to co-ordinate the development of the Institute as a forward-looking and world-class centre of excellence in bioinformatics service, training and research by:

- locating and attracting excellent personnel
- developing the institute's programme and budget
- fund raising
- representing the EBI and European bioinformatics in the political arena

Desirable characteristics include:

- International scientific stature; strong experience and leadership ability pertinent to the EBI
- Vision for future developments in biology related to bioinformatics
- Commitment to the broad mission of the EBI and to international science as represented by EMBL
- Administrative, collaborative and fundraising skills in the European context

EMBL
Personnel Section,
Postfach 10 22 09
D-69012 Heidelberg
Germany

As an inclusive international organization, EMBL invites applications from all qualified candidates. Women and nationals of Southern European or other currently under-represented Member States are encouraged to apply. In exceptional cases, a part-time appointment may be considered.

Deadline for applications: April 15, 1994.

Please write briefly to the Personnel Section in Heidelberg for an application form, quoting ref. no. 94/05.

Miles Inc., Pharmaceutical Division, has exceptional career opportunities for experienced, self-motivated individuals in the areas of Inflammation, Autoimmunity, Osteoporosis, Osteoarthritis, and Cancer Research.

Associate Research Scientist Animal Pharmacology

We are seeking an Animal Pharmacologist to assist in the establishment of animal models. You must have a background in animal physiology/biology and in handling small animals. Extensive experience in handling rodents is essential. This position will also require small animal surgery techniques. A Bachelor's degree with two or more years' experience or a Master's degree with minimal experience in animal or biological science is required. Additional experience with FACs analysis, immunoassays, or immunohistochemistry is desirable.

Associate Research Scientist Immunology

In this position, you will be expected to perform human T cell cloning, immortalization, and various immunobiology assays toward both the development of drug screening assays as well as contribute to the identification of new drug discovery targets. You will also be responsible for generating and assimilating data into reports with some expectation of data interpretation and problem solving. A Bachelor's degree with 2 or more years' proven experience or a Master's degree with minimal experience in lymphocyte cell culture is required. Proficiency in basic immunological methodology and experience with primary T cell culture and in-vitro T cell-based assays is required.

We offer attractive compensation and generous benefits. Interested candidates, please send resume indicating position of interest and salary history to: **Miles Inc., Pharmaceutical Division, Dept. ELMB, 400 Morgan Lane, West Haven, CT 06516.** An Equal Opportunity Employer M/F/D/V.

MILES 
Pharmaceutical
Division

POST-DOCTORAL OPPORTUNITIES IN SCHIZOPHRENIA/BIPOLAR DISEASES STANLEY LABORATORY AT THE JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE

The Theodore and Vada Stanley Foundation is setting up a novel laboratory and training program in Molecular and Neuropsychology at Johns Hopkins under the direction of Robert Yolken, M.D. Fellowships will include full salary support plus research and travel expenses for three years. The program will begin July 1, 1994.

Preceptors will be Johns Hopkins Medical School faculty in the Departments of Psychiatry, Pediatrics, Neurology, Neuroscience, Medicine and from the Program of Cellular and Molecular Medicine. Fellows will have the opportunity to work with several preceptors during the course of their fellowship.

It is expected that fellows will have a M.D. or Ph.D. in a relevant basic science, clinical training in psychiatry or both. The goal is to bring together fellows and faculty members with diverse backgrounds into a program to discover the molecular and cellular bases of bipolar affective disorder and schizophrenia.

For further information, contact:

Dr. Robert H. Yolken, M.D.
Professor of Pediatrics
Johns Hopkins University
600 N. Wolfe St., Blalock 1111
Baltimore, MD 21287-4933
Office: 410-955-3271
FAX: 410-614-1491
E-Mail: Yolken@Welchlink.Welch.Jhu.Edu



Experienced Protein Crystallographer



Pfizer is one of the world's leading research based pharmaceutical companies, with an excellent portfolio of established and new products. Success has brought a major expansion of our Sandwich facilities where over a thousand staff are already employed in Research and Development.

We are now looking for an experienced Crystallographer to play a key role in establishing protein crystallography in our Discovery Chemistry Department. As the lead member of our Crystallography laboratory, you will solve structures of relevant proteins such as enzymes and cell adhesion molecules and their complexes with ligands. You will work closely with our established Computational Chemistry group in the analysis of these structures and their exploitation in structure-based drug design. This is an excellent opportunity to join a dynamic research environment which includes existing laboratories in protein expression, purification and crystallisation, biomolecular nmr and molecular modelling.

This position requires a Ph.D. scientist with broad experience in protein crystallography. You should have several years post-doctoral experience in protein crystallography and a proven track record of solving protein structures. You should be industrious, a self-starter and a problem solver, with both the interpersonal and communication skills to work effectively in our multidisciplinary environment.

Pfizer offers the salary, career structure and benefits you would expect of a leading and successful company, including flexible working hours and merit based bonus and progression. We offer relocation assistance where appropriate.

Please send a CV to Mr. S. Rhodes, Senior Personnel Officer, Pfizer Central Research, Ramsgate Road, Sandwich, Kent CT13 9NJ. Tel: (0304) 618710. Fax: (0304) 618749.

Pfizer Central Research



CALYDON, a new company located in Palo Alto, CA, is a biopharmaceutical company involved in the development of *in vivo* gene therapies for cancer. We are seeking molecular biologists at all levels.

BS, MS, Ph.D.

Our candidates are highly motivated individuals with experience in some of the following: DNA subcloning, cDNA cloning, library construction and analysis, PCR, DNA sequencing, transcription factor analysis, tissue culture, immunoassay, animal techniques, gene delivery systems, and GMP formulation. Knowledge of gene therapy and cancer is a plus but not essential.

CALYDON offers an exciting research opportunity, competitive salaries and benefits, new laboratory facilities, and a collegial environment. Send your CV to: CALYDON, P.O. Box 3667
Stanford CA 94309-3667

FACULTY of MEDICINE

CHAIR OF BIOCHEMISTRY CHAIR OF CLINICAL BIOCHEMISTRY CHAIR OF STRUCTURAL BIOCHEMISTRY

The University Court invites applications for appointment to three Chairs. The Chair of Biochemistry will be vacated by Professor Andrew Miller on his appointment as Principal and Vice-Chancellor of the University of Stirling in August 1994; the post will be held in the Department of Biochemistry. The Chair of Clinical Biochemistry was previously held by Professor L G Whitby until his retirement and will be held in the Department of Clinical Biochemistry in the Royal Infirmary of Edinburgh. The newly established Chair of Structural Biochemistry will be held in the Department of Biochemistry.

The University seeks to appoint established scientists of the highest standing to all three positions, with no requirement that those appointed should be clinically qualified. The major requirement for each post is that the person appointed will be expected to provide significant research leadership in biochemistry and clinical biochemistry at the University of Edinburgh.

The appointee to the Chair in Clinical Biochemistry should have interests in some aspect of biochemistry or cell or molecular biology relevant to medicine or to one of the related clinical laboratory sciences. Responsibility for the extensive clinical laboratory services provided by the Department of Clinical Biochemistry is subject to periodic review and agreement between the University and the NHS.

The Department of Biochemistry provides excellent opportunities for research, including structural studies, and applicants for the Chair in Structural Biochemistry may be active in any aspect of macromolecular structure research.

Further particulars may be obtained from:

**THE SECRETARY TO THE UNIVERSITY,
THE UNIVERSITY OF EDINBURGH, 1 ROXBURGH STREET,
EDINBURGH EH8 9TB, Fax: 031-650 6509**

with whom applications (15 copies, or one for overseas applicants) including names and addresses of three referees, should be lodged not later than 25th March, 1994. Applicants by fax should be confirmed by mail.

When enquiring for further particulars, or lodging an application, please quote one or more of the following reference numbers:

Chair of Biochemistry: REF: SC 940035.
Chair of Clinical Biochemistry: REF: SC 940036.
Chair of Structural Biochemistry: REF: SC 940037.



COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES

University of California, Davis

Inquiries are invited from qualified applicants for faculty positions available July 1, 1994.

Assistant/Associate Cooperative Extension Rangeland Management Specialist. To address rangeland ecology, watershed hydrology, water quality, riparian and streambank restoration and vegetation management on California rangelands. Apply to: Melvin George, Dept. of Agronomy and Range Science, by March 1, 1994. FAX 916-752-4361.

Assistant/Associate Cooperative Extension Specialist/Vegetable Crops Production and Postharvest Horticulturist. Focus on vegetable crop production, environmental quality, and food quality and nutrition. Apply to: Ronald E. Voss, Department of Vegetable Crops, by March 15, 1994.

Assistant Cooperative Extension Weed Specialist - Vegetation Management/Weed Ecology. CE (75%) and research (25%). Emphasize weed management in non-cultivated managed California ecosystems. Apply to: Clyde Elmore, Section of Plant Biology, by February 28, 1994. FAX 916-752-5410.

Assistant Cooperative Extension Food Safety/Microbiology Specialist. To address matters concerning microbiological contamination of foods. Apply to Carl Winter, Dept. of Food Science and Technology. Closing date pending.

Assistant/Associate Cooperative Extension Vertebrate Pest Ecology Specialist. Disciplinary expertise in vertebrate ecology with an emphasis on wildlife damage control. Apply to: Dirk Van Vuren, Dept. of Wildlife and Fisheries Biology, by April 29, 1994.

Assistant/Associate/Full Professor and Assistant/Associate/Full Sensory Scientist. Develop teaching and research in sensory science to address problems such as methodology, perception and the relationship of food composition to sensory properties. Apply to: Norman Haard, Dept. of Food Science and Technology. Closing date pending.

Assistant Professor and Assistant Developmental Geneticist. Teaching in general area of developmental genetics. Research specialty in suitable avian or mammalian models with focus on fundamental discipline problems relevant to agriculture and environmental science. Apply to: James Millam, Dept. of Avian Sciences, by March 31, 1994.

Positions anticipated to be open in the near future are listed below. Direct inquiries to the Chair of the respective department.

Associate/Full Professor and Dept. Chair, Dept. of Agronomy and Range Science

Cooperative Extension Cotton Specialist, Dept. of Agronomy and Range Science

Animal Nutrition Cooperative Extension Specialist, Dept. of Animal Science

Youth Development Director, Dept. of Applied Behavioral Sciences

Developmental/Behavioral Scientist Focusing on Adolescence, Dept. of Applied Behavioral Sciences

Biological Engineer - Animal Environment Emphasis, Dept. of Biological and Agricultural Engineering

Community Nutrition Cooperative Extension Specialist, Dept. of Nutrition

Experimental Nutritionist and Registered Dietitian, Dept. of Nutrition

Mycologist/Epidemiologist, Dept. of Plant Pathology

Avian Biologist (Waterfowl), Dept. of Wildlife and Fisheries Biology

Biochemical Engineer/Fermentation Scientist, Dept. of Viticulture and Enology

These positions are to be filled at the Assistant Professor or Assistant Cooperative Extension Specialist 11-month salary level (unless other rank is indicated above). Professorial positions have responsibilities for teaching, advising and research (in the Agricultural Experiment Station) and require teaching and research experience. Cooperative Extension positions have responsibilities for applied research and outreach. Candidates must have a Ph.D. in an appropriate field. Applicants should submit resume, transcripts (if within five years of graduation), statement of research and teaching experience, list and reprints of publications, and the names and addresses of at least three persons familiar with the applicant's qualifications, to individual and department as noted for position (department name), University of California, Davis, CA 95616. Please indicate the position(s) in which you are interested. The completed application must be received by date indicated for each position. **The University of California is an Affirmative Action/Equal Opportunity Employer.**

Associate Scientists/ Research Assistants

~ASSAY DEVELOPMENT AND SCREENING GROUP~

Onyx Pharmaceuticals is a dynamic young company engaged in the development of small molecule therapeutics for cancer and other diseases associated with abnormal cell growth. Our research focuses on *ras* and its superfamily and tumor suppressor genes, fundamental mechanisms governing many cell functions including growth and differentiation.

Our recent commitment to establish a world-class screening operation has led to a requirement for both Ph.D. and B.S. level personnel with significant experience and expertise in high throughput screening of compounds, natural products and/or combinatorial chemical libraries. Experience in Robotics/Automation techniques or in enzymology as they apply to this area would be an added advantage. In addition to a proven track record of scientific achievement, candidates must be highly motivated individuals with good organizational and interpersonal skills.

ONYX is located in the San Francisco Bay Area, not far from Berkeley. A highly interactive atmosphere prevails, where publications and open discussions are strongly encouraged. We offer a competitive salary and benefits package, which includes stock options. If you are interested in joining us, please send/FAX your resume, in confidence, to: **Onyx Pharmaceuticals, HR Department SRC, 3031 Research Drive, Richmond, CA 94806. FAX: (510) 222-9758.** *Equal Opportunity Employer*

ONYX
PHARMACEUTICALS

CELLULAR/MOLECULAR BIOLOGIST

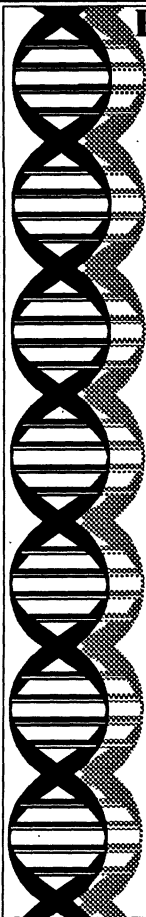


Tularik

Tularik is a rapidly growing biopharmaceutical company dedicated to the discovery and development of novel therapeutic products that regulate gene expression. We are actively seeking the following professional to join our team.

This scientist will assume a high profile position as a member of a team employing cell-based approaches and automated high throughput screening to identify drug candidates that alter the transcription of clinically important genes. We are presently focusing on genes central to the inflammatory process, viral replication and hypercholesterolemia. The ideal candidate will have a Ph.D. in Cellular Biology, Molecular Biology or a related field, and several years of postdoctoral experience. Expertise in mammalian cell culture, transfection studies and the analysis of gene expression is required.

Tularik offers an exciting, multidisciplinary research environment, where the latest developments in the understanding of gene regulation find practical application as novel ethical pharmaceuticals. For consideration, please submit your CV to: Tularik Inc., Dept. LM, 270 East Grand Avenue, South San Francisco, CA 94080. Tularik is an equal opportunity employer.



BIOTECH/PHARMACEUTICAL JOB FAIRS

La Jolla/San Diego
March 25 & 26

Boston/Cambridge
April 22 & 23

**Pfizer Central Research • SyStemix
• Depotech • Genzyme • Serono
Labs • Repligen • Baxter Hyland •
Sugen • Gen-Probe • Advanced
Tissue Sciences • and many local
and regional companies will be
participating in these events.**

Career Connection is the nation's leader in sponsoring industry specific job fairs in the biotechnical and pharmaceutical industries. Candidates have the opportunity to meet leading and emerging companies in the industry. These and other companies will be interviewing candidates at all levels from bachelor through post doctoral with backgrounds and experience in Biotechnical and Pharmaceutical Research & Development, Manufacturing, QA/QC, Clinical Trials, Regulatory Affairs and many other positions in biology and chemistry. Other job fair locations include Washington D.C., San Francisco, Seattle, Philadelphia and Research Triangle Park. For more information call Career Connection. Qualified candidates should send or FAX their resumes along with geographic preferences to:

CAREER CONNECTION

Dept. SM94
P.O. Box 7451
THOUSAND OAKS, CA. 91359
(800) 967-0020 FAX (805) 494-1870

Three Postdoctoral Research Associates Positions

A private, established biotechnology company located in the Boston, Massachusetts area is recruiting scientists to staff its newly constructed research facility. The company is a pioneer in the development of therapies based on the circadian neuroendocrine regulation of mammalian lipid and carbohydrate metabolism as well as immunology. Associates will interact with a multidisciplinary group of scientists including chemists, cell biologist, molecular biologists, endocrinologists, immunologists, physiologists, and chronobiologists to study circadian neuroendocrine regulation of metabolism in Type II diabetes and immunology at the cellular and organismal levels. The company seeks to fill the following positions:

Hepatic Metabolic Biochemist

Applicants should have a Ph.D. with a strong background in biochemistry and with experience in hepatocyte isolation and primary culture, cellular triglyceride and lipoprotein metabolism as well as interactions between hepatic glucose output and free fatty acid oxidation.

Hypothalamic Neuroscientist

Applicants must have a Ph.D. in a neurophysiology related area, and must have experience in microdialysis of hypothalamic nuclei and HPLC analysis of neurotransmitters and their metabolites, iontophoresis techniques and hypothalamic anatomy and physiology. An understanding of hypothalamic regulation of lipid and carbohydrate metabolism is desired.

Cellular Immunologist

Candidates should have a Ph.D. with a strong background in cellular immunology or equivalent to study neuroendocrine regulation of macrophage activation, lymphokine production, and B and T cell activation as they relate to autoimmune disease. Previous experience in inflammatory response processes with animal models of autoimmune disease (preferably Lupus) is required.

Applicants should send a complete curriculum vitae, a brief description of research experience, and names of three references to:

Science Box Number 47
1333 H Street, NW
Washington, DC 20005

A DYNAMIC MISSION

At The Glaxo Research Institute, *Our Priority Is Progress.*

Glaxo Inc., a research-driven pharmaceutical company, is dedicated to enhancing quality of life through the creative scientific pursuit of new therapeutic approaches. The Research Institute, located in Research Triangle Park, NC, offers an exceptional environment for a self-motivated scientist to participate in the drug discovery process. We invite you to join us today as a **Research Investigator in the Department of Cell Physiology.**

DIABETES GENETICS

The selected individual will participate in a multidisciplinary research group investigating the genetic basis of Type II diabetes. This individual will establish a research program utilizing genome mapping and molecular biology techniques to identify and characterize genes involved in the etiology of diabetes. This is an excellent opportunity to be part of an international effort, collaborating with academic partners, to significantly advance human genome research.

Background must include a Ph.D. in Genetics, Molecular Biology, or a related discipline, with a minimum of 3-5 years postdoctoral experience with extensive laboratory experience in gene mapping techniques and linkage analysis.

We offer an excellent salary, flexible benefits, and a superb quality of life in Research Triangle Park, NC, - the world's largest planned research center. For confidential consideration, send your resume which must include position title and salary history to: **Human Resources Department, Job #ASC912702, Glaxo Inc., P.O. Box 13398, Research Triangle Park, NC 27709.** (No Phone Calls or Agency Referrals, Please.) An Equal Opportunity Employer M/F/D/V.

Glaxo Inc.

The Time For Achievement Is Now

DIRECTOR OF MOLECULAR BIOLOGY

ImClone Systems is a dynamic biopharmaceutical company, headquartered in New York City, developing novel therapeutic products for the treatment of cancer and cancer-related disorders, which include cancer vaccines, cancer therapeutics and hematopoietic growth factors. An outstanding opportunity currently exists for an experienced individual to direct and manage our Molecular Biology department.

Candidates should have a Ph.D. in molecular biology or related scientific discipline, 10+ years of experience demonstrating scientific excellence in the study of cytokines, growth factors or antibody engineering, as well as managerial leadership and budget management experience.

We offer a competitive performance-based compensation package including stock options and a wide range of benefits. Interested and qualified candidates are urged to reply by sending your C.V., salary requirements, and references to:



ImClone Systems Incorporated
Attn.: HR/Molecular Biology
180 Varick Street
New York, NY 10014
or Fax CV to
(212) 645-2054

EOE

For 106 Years, Our Research Has Focused On Real-Life Challenges.

Since 1888, Abbott has been a pioneer in the development of advanced health care products and services. Today, you could join us and contribute to research that is improving the quality of human life in 130 countries worldwide.

Chemical Information Scientist

You will develop and support chemical information systems for application in pharmaceutical products R&D. These systems support drug sample inventory, chemical modeling, substructure queries, reaction databases, and integration with other databases. Databases include proprietary and commercial information. You will have broad responsibilities including project leadership, full software life cycle planning, development, maintenance and support, conformance to federal regulations, chemical database administration, and technology evaluation.

We require a PhD in Chemistry or equivalent, at least 2 years of project leadership experience, and 4 years of scientific software development background, preferably in chemical information systems.

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 to: Linda DeLavallade, D-393, J30, Job# 69074, 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
1888-1994

Experience The Abbott Edge.

SCIENTIST/GROUP LEADER

Upstate Biotechnology, Inc., a rapidly growing supplier of quality products for biological research, currently has an opening for a Scientist to serve as Group Leader in Cell Biology. The Group Leader will supervise technical staff in the production and testing of growth factors, signal transduction reagents and antibodies. There will also be an opportunity to be involved in new product development.

The position requires a Ph.D. in Cell Biology and experience or familiarity with cell biology techniques including cell culture, immunocytochemistry, both polyclonal and monoclonal antibody production and protein purification.

Upstate Biotechnology, Inc. is located in beautiful Lake Placid, New York, a year-round center for outdoor recreation in the heart of the Adirondack Mountains. We offer a competitive salary, moving expenses and excellent benefits. A position with Upstate Biotechnology, Inc. will provide the successful applicant with a diversity of experiences including an excellent introduction to industry in a relaxed, yet challenging environment. Upstate Biotechnology, Inc. is a wholly owned subsidiary of the W. Alton Jones Cell Science Center.

Send curriculum vitae and list of references to: Josette Gaudreau, Upstate Biotechnology, Inc., 199 Saranac Avenue, Lake Placid, NY 12946. An Equal Opportunity Employer.

RECRUITMENT ADVERTISERS

SAVE 25%

Running your recruitment ad once may not be enough. Place the same ad again within the next eight issues and get 25% off your second insertion.

- Get more attention
- Get more value
- Get more résumés

Reach the global scientific community you need to maximize your recruitment efforts. **SCIENCE** does it bigger, better and at greater savings for you.

Call, write, or fax:
SCIENCE Classified Advertising
1333 H Street, N.W.
Washington, D.C. 20005
Phone: 202-326-6541/6555
Fax: 202-682-0816

Director of the Cancer Center of the Albert Einstein College of Medicine

The Cancer Center of the Albert Einstein College of Medicine is seeking new leadership for the next decade. The Center is an NCI-designated Clinical Cancer Center that is expanding its programs in molecular oncology, signal transduction, immunology, drug design, growth control in malignant cells and clinical research in hematological malignancies and solid tumors as well as developing new programs in cancer epidemiology, prevention and control. Candidates should have a strong record of academic accomplishment and be qualified to provide organizational and scientific leadership for a large group of basic and clinical investigators and to the staffs of the many shared facilities that form the core of the Center. New research space is being developed and new clinical affiliations have and will continue to be established. Candidates should submit a curriculum vitae and the names of three references to Dr. Matthew D. Scharff, Director, Cancer Center, Albert Einstein College of Medicine, Jack and Pearl Resnick Campus, 1300 Morris Park Avenue, Chanin 330, Bronx, New York 10461. An Equal Opportunity Employer.

**ALBERT EINSTEIN
COLLEGE OF MEDICINE**

Toward the
advancement of medicine
...and your career



Hedberg Distinguished Professorship for Entrepreneurial Studies in the Sciences

Carthage College seeks applicants for the newly established Donald D. Hedberg Distinguished Professorship for Entrepreneurial Studies in the Sciences. The individual, who will be appointed at the full professor rank, will be a member of the Division of Natural Sciences.

The Donald D. Hedberg Professor will be responsible for forming a Center for Entrepreneurial Studies and will serve as the Center's director. The candidate also will develop a curriculum for entrepreneurial studies for science students; teach appropriate courses; and initiate and supervise co-curricular activities involving science students interested in entrepreneurship. Other duties will include recruiting students into the program; cultivating external interest in the Center's activities; and seeking additional funding for the Center and student scholarships.

Candidates must have a Ph.D. in biology, chemistry, mathematics, or physics. In addition to formal scholarly credentials, applicants must have an enthusiastic commitment to teaching in a small college environment of personalized and success-oriented education.

Located on the shore of Lake Michigan midway between Milwaukee and Chicago, Carthage offers quick urban access from the relaxed setting of a small city. Predominantly Midwesterners, students come from more than 20 states and seven foreign countries. Founded in 1847, Carthage is affiliated with the Evangelical Lutheran Church in America.

Nominations and applications, including a current curriculum vitae, should be sent by March 31, 1994, to Donald M. Michie, Dean of the College, Carthage College, Kenosha, Wisconsin 53140-1994.

Amylin

PHARMACOLOGY

Amylin Pharmaceuticals, Inc. is a growing pharmaceutical company working on new medicines for diabetes and related metabolic disorders. We currently seek 2 key Ph.D. scientists.

SENIOR SCIENTIFIC INVESTIGATOR, RECEPTOR BIOLOGY

This person will lead a group responsible for research on novel receptors that are targets of drug discovery efforts. Includes initiating and directing experimental work to determine mechanisms of receptor activation and signal transduction and overseeing an existing highly effective screening group.

The successful candidate will have a Ph.D. in Pharmacology with a minimum of 8 years' progressively responsible post-doctoral experience as evidenced by a strong publication record. This position requires significant prior experience elucidating G-protein coupled receptor mechanisms in cells and tissues, and experience with a variety of signal transduction systems, including cyclic nucleotides, lipid messengers and intracellular calcium. Recent experience in an industrial setting and familiarity with IND filing is preferred.

SENIOR STAFF SCIENTIST

This person will engage in research on cellular localization of receptors, hormones and encoding mRNA. Position requires expertise in anatomical localization methods including autoradiography, in situ hybridization, and immunohistochemistry. Ph.D. with 1-4 years' post-doctoral experience is required.

Amylin is located in San Diego and offers a stimulating work environment and an excellent salary and benefits package, including stock option participation. If you are interested in a truly unique scientific opportunity, please send your resume and salary history to: A. McGovern/K.B., Amylin Pharmaceuticals, Inc., 9373 Towne Centre Drive, San Diego, CA 92121.

Amylin is pleased to offer Equal Opportunity Employment and a culturally diverse workplace to everyone.



Excellence in Pharmaceutical Development

Cortech, Inc. is a publicly-held pharmaceutical company utilizing a multi-disciplinary approach to develop new therapies for inflammatory and immune disorders. Our diversified product pipeline includes a bradykinin antagonist now in active clinical trials. Multiple products with multiple indications, multiple positions with room for growth—that's Cortech. And these are the kinds of opportunities we're offering now in our Denver, Colorado facility:

IMMUNOLOGICAL CHEMISTRY GROUP LEADER

Responsible for the scientific and administrative management of our immunological chemistry group. Requires a Ph.D. in chemistry or biochemistry, with 5-7 years' industrial experience and at least three years' supervisory experience. Candidates should be experienced with biopolymers, peptides, and low molecular weight organic molecules.

We also have the following R & D positions available:

IMMUNOLOGICAL CHEMISTRY RESEARCH ASSOCIATE

CHEMISTRY RESEARCH ASSOCIATE

BIOPHARMACEUTICAL RESEARCH ASSOCIATE

Due to the expansion of our drug development programs, we anticipate the need for experienced professionals in: Clinical Research, Regulatory Affairs, and Quality Compliance.

Cortech, Inc. offers a competitive salary and full menu of benefits including stock options and relocation assistance. Send your resume and salary requirements, indicating position of interest, to: Cortech, Inc., Attn: Human Resources, Dept. SM, 7000 North Broadway, Denver, Colorado 80221. No agencies, please. Equal opportunity employer.



IMMUNOLOGY FACULTY POSITIONS Sloan-Kettering Institute for Cancer Research

Tenure-track positions at the Assistant or Associate Member levels are available in the Immunology Program at the Sloan-Kettering Institute. Candidates with an interest in lymphocyte receptors, signal transduction, antigen processing, or cytokine biology will be given preference. Candidates should have a successful record of research achievements in immunology and the ability to develop a strong, independent research program. The Immunology Program has an active faculty whose research interests encompass histocompatibility, transplantation, immunogenetics, T lymphocyte development and function, immunochemistry, gene regulation, and tumor immunology and biology. Interactions with other members of the Immunology Program and with the other programs in the Institute (Molecular Biology; Cell Biology and Genetics; Molecular Pharmacology; and Cellular Biochemistry and Biophysics) are encouraged. Affiliation with Cornell University Graduate School is possible. An attractive start-up package will be provided for the investigator to establish or re-establish his/her laboratory.

Applicants should send a Curriculum Vitae, bibliography, statement of research interests and names of three references to:

Dr. Kenneth O. Lloyd,
Chairman, Immunology Program
Sloan-Kettering Institute
1275 York Avenue
New York, NY 10021

—SKI is an affirmative action, equal opportunity employer—

POSITIONS OPEN

SENIOR BIOLOGIST

The Northwest Power Planning Council, an interstate compact agency charged with rebuilding salmon and steelhead in the Columbia River Basin, seeks an experienced scientist with expertise in anadromous salmonid biology, preferably at the Ph.D. level, to serve on its staff. Candidates should have education and experience in subjects related to natural and artificial production of anadromous salmonids, including genetics, conservation biology, ecology, artificial production, and fish health. This position involves the coordination of research activities relating to the Council's program and to the infusion of genetics concerns into basinwide fish production activities.

Salary commensurate with qualifications. *Women and minorities especially encouraged to apply.* Submit résumé and letter explaining qualifications to: **Jim Tanner, Administrative Officer**; 851 S.W. 6th Avenue, Suite 1100; Portland, OR 97204. Deadline for applications is March 15, 1994.

MOLECULAR BIOLOGIST/IMMUNOLOGIST

Full-time research position available immediately for a well-trained, highly motivated scientist to join the NIH/ACS-supported Human Immunology & Cancer Program in the Department of Medicine, University of Tennessee Medical Center at Knoxville, (UTMC/K). The major research focus involves characterization of the human V genome, with particular emphasis on light-chain-associated genes and the use of *in vivo* experimental animal models to study the pathogenesis and treatment of multiple myeloma and AL amyloidosis. The successful candidate will work in a well-established, full-equipped molecular biology laboratory with access to students and a nearby transgenic facility. Additional programmatic resources include hybridoma/mAb, flow cytometry, protein and peptide chemistry, immunochemistry, and computer laboratories. Tenure-track position requires a minimum of 2 years of post-doctoral research experience. Excellent compensation (including fringe benefits) and academic rank commensurate with education and experience. The Knoxville area offers the scientific resources of the University of Tennessee and the Oak Ridge National Laboratory; recreational opportunities provided by the surrounding Great Smoky and Cumberland Mountains and extensive TVA lake system; and cultural amenities including a symphony and chamber orchestra, a major fine arts museum, opera, and theatre. Letter of application, curriculum vitae, and names and addresses of 3 reference sources should be sent to: **Alan Solomon, M.D., Professor of Medicine and Head, Human Immunology & Cancer Program, UNIVERSITY OF TENNESSEE MEDICAL CENTER/KNOXVILLE, 1924 Alcoa Highway, Knoxville, TN 37920.** UTMC/K is an Equal Employment Opportunity/Affirmative Action/Title IX/Section 504/ADA Employer.

PULMONARY PHARMACOLOGIST

A **PULMONARY PHARMACOLOGIST** is required who will be responsible for the development of novel anti-asthma drugs from the early research stage to clinical trials. The candidate should have several years of experience in the pharmaceutical industry in the area of anti-asthma drug development. Experience and knowledge of drug filing for IND and NDA with FDA is required. Salary will be \$50,000 to \$70,000 per annum plus benefits depending on experience. Please send résumé with the names of three references to: **Personnel Department, InflaZyme Pharmaceuticals Ltd., 800-777 West Broadway, Vancouver, B.C., Canada V5Z 4J7.**

ELECTRON/LIGHT MICROSCOPIST

The Department of Cell Biology at Duke Medical Center is seeking a structural biologist specializing in advanced techniques of electron or light microscopy. We are especially interested in applications to protein structure and protein-protein assemblies. Candidates are expected to participate in graduate and medical teaching and the scholarly activities of the Department. This is a tenure-track appointment and all levels of applicants are eligible. Please send curriculum vitae, research plans, and three letters of recommendation to: **Dr. Michael Sheetz, Ph.D., Chairman, Department of Cell Biology, Duke University Medical Center, Box 3709, Durham, NC 27710.** Application deadline: April 1, 1994. *Duke University is an Equal Opportunity/Affirmative Action Employer.*

ANNOUNCEMENTS

CAREER CHANGE OPPORTUNITY

This unique program offers the candidate with an earned doctorate in the sciences the opportunity to obtain the Doctor of Optometry (O.D.) degree in two calendar years. Employment opportunities exist in private practice, industry, education, and research. Contact: **Dr. D. Chauncey, Program Director, Accelerated Program, The New England College of Optometry, Room S, 424 Beacon Street, Boston, MA 02115.**

MEETINGS

SCHMITT NEUROLOGICAL SCIENCES SYMPOSIUM THE CYTOSKELETON IN ALZHEIMER'S DISEASE

MAY 21-23, 1994

Radisson Hotel at Rochester Plaza
Rochester, New York, USA

Session topics to include: Development, structure and function of the neuronal cytoskeleton; Neurofibrillary tangles; Posttranslational processing relating to neurofibrillary tangles; Consequences of cytoskeletal lesions in Alzheimer's disease; Models of Alzheimer's disease; Relationships between neurofibrillary tangles and senile plaques; and Implications for therapeutic strategies. For information and registration contact: **University of Rochester, Telephone: (716) 275-4392, FAX: (716) 275-3721.**


MARKETPLACE

Custom made
PEPTIDES
Around the globe  NO SETUP CHARGE
\$30.00 /residue **15 - 20** mgs
Shipped in 5-10 days
Conjugation/Antiserum production services, & more
BIO-SYNTHESIS
1-800-227-0627 Fax: 214-420-0442

Circle No. 34 on Readers' Service Card

ABS Bioreagents™
Custom Receptor Binding,
Enzyme, and RNA Preparations
Fast, Cost-Effective Service
Analytical Biological Services Inc.
(302) 654-4492

Circle No. 2 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**
cell systems

Circle No. 27 on Readers' Service Card

MARKETPLACE

Superior Quality
L-NMMA
100 mg - \$76 1 g - \$149 10 g - \$740
Other NOS Inhibitors Available
CHEM-BIOCHEM RESEARCH, INC.
Products for Research Since 1979
800-340-9479

Circle No. 44 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. 38 on Readers' Service Card

KEYSTONE The Complete
Laboratories, Inc. Oligonucleotide
Company
OLIGONUCLEOTIDES
Volume orders of 200 - 500 total bases
\$2.50 per base
No set-up fee; shipped in 24hrs.
Tel. 1-800-788-4DNA • Fax 1-800-786-4DNA

Circle No. 8 on Readers' Service Card

CUSTOM DNA SYNTHESIS
We use Applied Biosystems Synthesizers • Prices from \$2.50 per base plus setup
PAGE and HPLC Purification Available
The Midland Certified Reagent Company
800-247-8766 or FAX 915-694-2387

Circle No. 7 on Readers' Service Card

Q **Monoclonal Antibodies**
E *are just the Beginning. . .*
D **MAB DEVELOPMENT**
SEQUENCING MODELING
Fax 619-451-0105 800-929-2114
A business unit of ImmunoPharmaceuticals, Inc.

Circle No. 37 on Readers' Service Card

Activated For Protein Modification
PEGs
Shearwater Polymers, Inc.
(800) 457-1806
(205) 533-4805 (fax)

Circle No. 12 on Readers' Service Card

Express Peptides
5 mg in 5 days
\$25 per residue
Research Genetics
1-800-533-4363

Circle No. 6 on Readers' Service Card

GENERELEASER

PCR* READY DNA IN 5 MINUTES

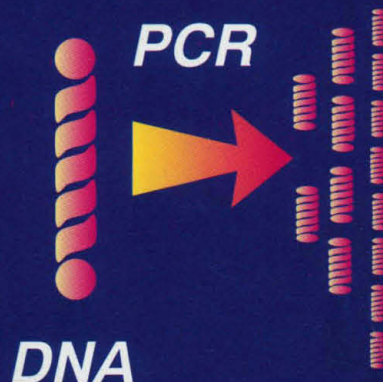
1993
R&D
100
WINNER



**SAMPLE
TYPES**

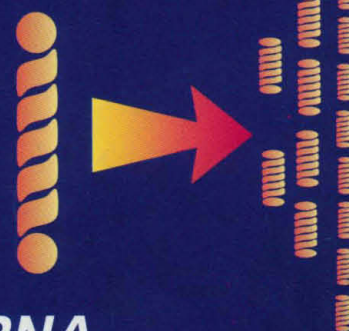


- * FIVE MINUTE PROTOCOL
- * MULTIPLE ASSAYS
- * KITS NOW AVAILABLE



DNA

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.

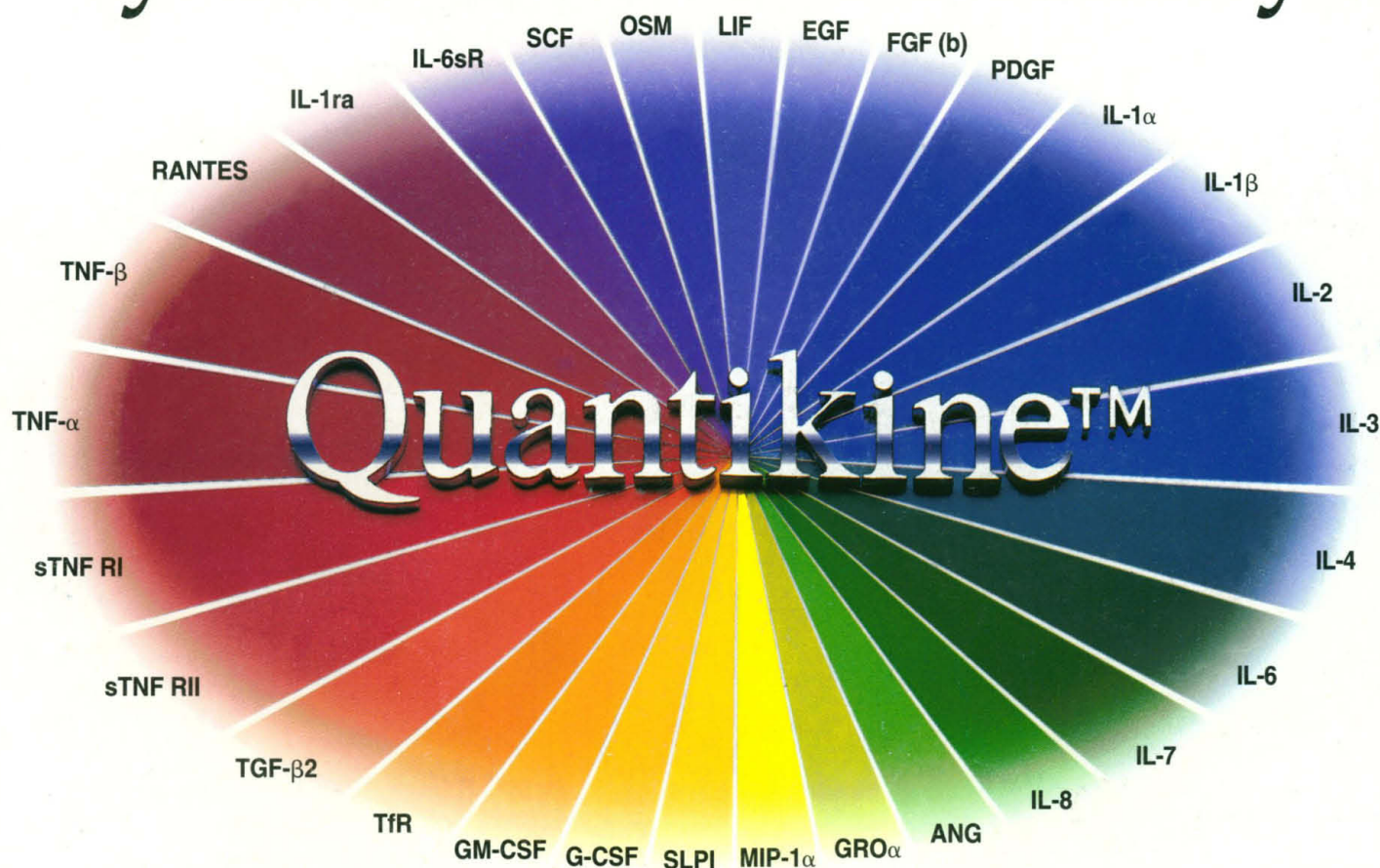
Phone 800-235-8938 FAX 615-896-4837

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 Meditech 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

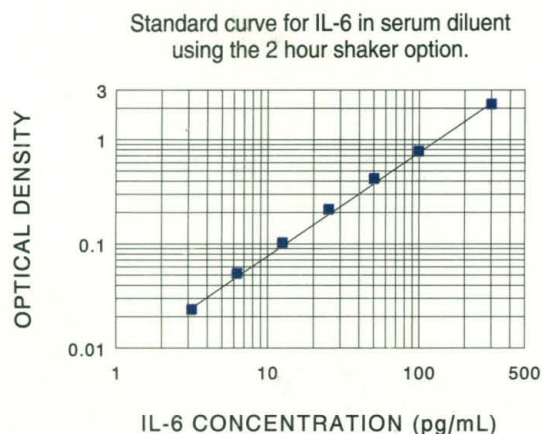
PCR IS COVERED BY PATENTS OWNED BY HOFFMANN-LA ROCHE

Circle No. 10 on Readers' Service Card

Cytokine Immunoassays



Sensitive...Precise...Accurate.



Cytokines exert their effects at extremely low concentrations in the presence of many other bioactive proteins. Quantikine immunoassays provide precise determination of cytokines in very complex biological samples.

- Sensitivity in the picogram range
- Tested for cross reactivity with all available cytokines
- Assay time - 2.0 - 4.5 hours
- Precoated 96 well strip plates
- Prediluted HRPO-conjugated second antibody
- Diluents for Serum/Plasma and Cell Culture Media
- Low inter-and intra-assay CV's

To obtain a catalog, detailed product information or to place an order:

In North America Contact:

R&D Systems
614 McKinley Place N.E.
Minneapolis, MN 55413
Telephone: 800-343-7475
Fax: (612) 379-6580

Freephone:

Belgium: 078 11 04 68
Denmark: 80 01 85 92

In Europe Contact:

R&D Systems Europe
4-10 The Quadrant, Barton Lane
Abingdon, Oxon OX14 3YS
Telephone: +44 (0235) 531074
Fax: +44 (0235) 533420

France: 05 90 72 49
Netherlands: 060 225 607

In Japan Contact:

Funakoshi Co., Ltd.
9-7, Hongo 2-Chome
Bunkyo-ku, Tokyo 113
Telephone: +81 (03) 56841622
Fax: +81 (03) 56841633

Norway: 800 11 033
Sweden: 020 79 31 49

R&D
SYSTEMS

1-800-343-7475

Circle No. 30 on Readers' Service Card