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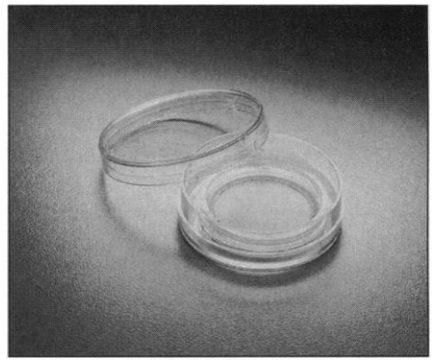

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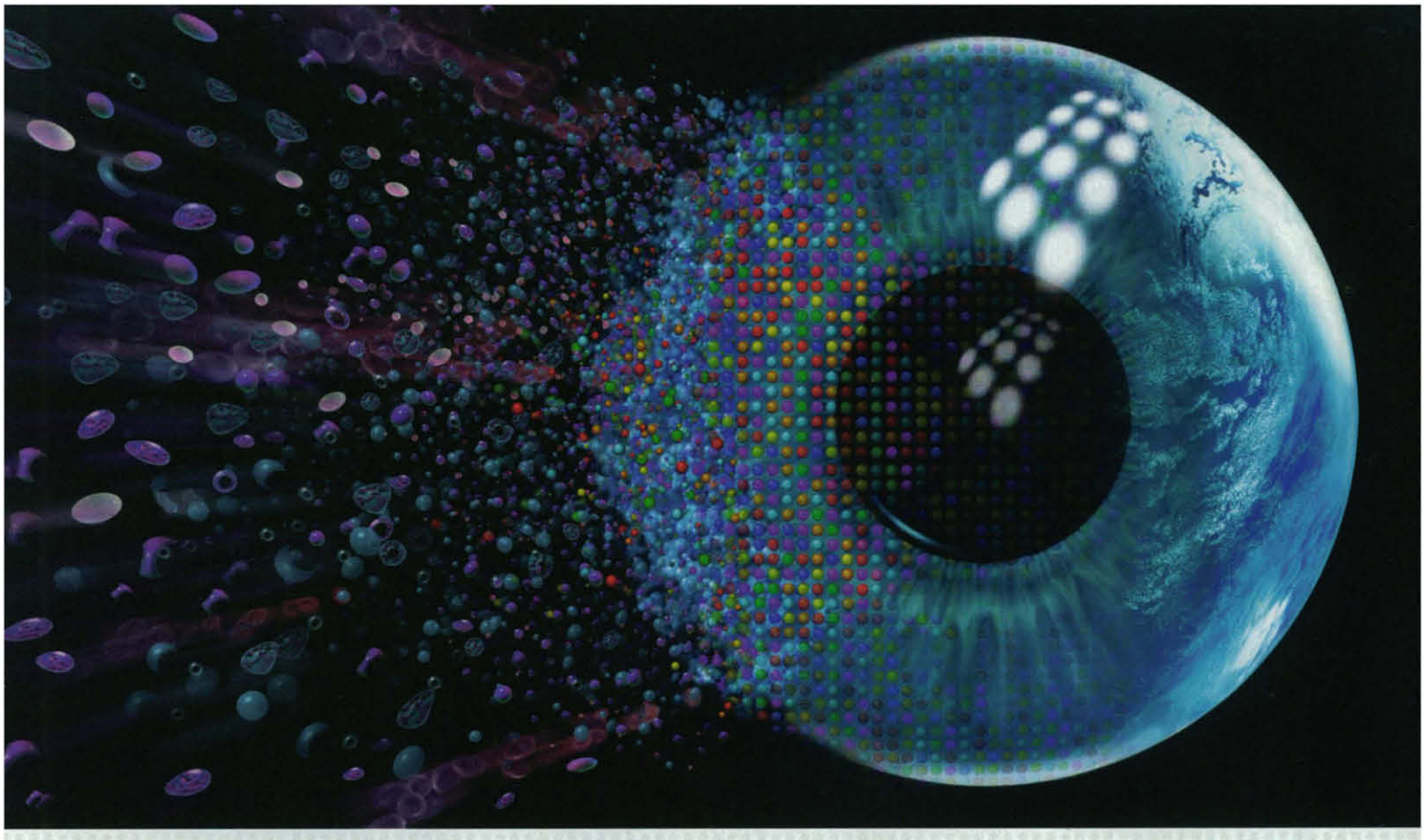

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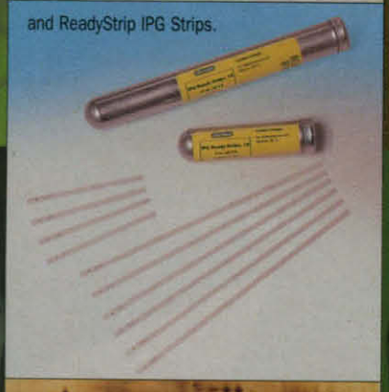

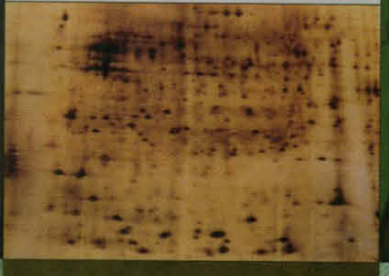

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BIOTECHNOLOGY DEVELOPMENT

GEOGRAPHY IS DESTINY

It takes a combination of scientific, political, and financial factors to make a district or region attractive to biotechnology companies.

By Peter Gwynne and Guy Page

In a few short years, biotechnology has established itself as a business with huge promise for the 21st century. While the biotechnology industry's total capitalization scarcely exceeds that of pharmaceutical company Merck, it has an extraordinarily rapid growth rate, combined with a great capacity to innovate. Not surprisingly, then, the idea of setting up a strong cluster of biotechnology companies represents an attractive option for regional business organizations. After all, biotechnology businesses tend to be capital-intensive. They occupy comparatively expensive facilities, employ higher-end technical staff, and generate significant local income.

So far, however, only a few geographic centers have succeeded in establishing solid biotechnology bases. The major centers include San Francisco's Bay area, the Boston-Cambridge axis in Massachusetts, San Diego, Seattle, Maryland-Washington D.C., New Jersey-Philadelphia, and North Carolina. Other regions in the U.S. and Canada have efforts under way to build bases of biotechnology, but they find the process a challenging one. The difficulties stem from the complicated web of factors that determine successful locations for biotechnology companies, individually and in clusters.

"Geographical location plays into things, for a number of reasons," says Alan Auerbach, vice president and biotechnology analyst of San Francisco-based First Security Van Kaspar & Co. "You have a number of biotechnology communities that are quite tightly knit. They support one another. The proximity encourages companies to communicate and potentially collaborate with one another."

Biotechnology differs from another modern paradigm of high-technology business success, the software industry, in several ways. Most important, while software developers can set up in a garage and grow from there, entrepreneurs in biotechnology require large amounts of laboratory space, costly equipment, and the efforts of teams of experienced scientists to develop their initial ideas. Even when they produce their first products, biotechnology firms must run an obstacle course of regulatory requirements before they can take them to market and, perhaps, start to show a profit. And the criteria for locating a start-up biotechnology company that concentrates mainly on R&D differ

from those that determine whether the same company should set up its manufacturing facilities once the R&D leads to commercial products.

Other things being equal, founders will set up biotechnology firms in their own backyards. "The primary reason that biotechnology companies locate where they do is that the scientists who make the basic discoveries are generally comfortable where they are," says Wayne Schnarr, vice president of BioCatalyst Yorkton, Inc., a venture management firm in Toronto. However, other factors play at least some role in the decision about where to locate initially, or where to move the infant company once it has passed the early tests of survival. The most significant include the academic ambience; the attitude of state and local government to high-technology business; the ability to obtain venture capital and other sources of financial support; the proximity of other biotechnology companies; and the availability of technically trained staff and support personnel with experience in the industry.

ACADEMIC ASSETS

More than almost any other high-technology business, biotechnology depends on close ties with leading academic institutions, both at its inception and for its continued survival. Like most high-technology companies, biotechnology firms emerge to capitalize on narrowly focused ideas or visions. More often than not, those ideas arise in the academic environment, although often in forms different from those in which they are realized commercially.

All research universities and medical centers maintain technology transfer offices that have the goal of publicizing and licensing intellectual property obtained at the institution. However, as any business professional knows, the truly valuable fruits of academic activity are plucked long before they reach the technology transfer office. Close personal and professional relationships between industry scientists and academics provide the main conveyance for the most promising ideas.

In many cases, universities also provide the initial staff for biotechnology companies, in the form of professors who spend furloughs or consulting time at the firm, and full-time staff selected from graduate students who participated in the research that produced the commercial ideas. "We encourage faculty to consult up to 20 percent of their time," says Phyllis Gardner, senior associate dean for educational affairs and associate professor of molecular pharmacology and medicine at Stanford University. "They get to know the business world and get a less insular view." Gardner herself recently returned to the campus after a four-year combined sabbatical and leave of absence, during which she served as vice president of research for local biotechnology firm Alza. "There's a culture in Silicon Valley that encourages spinouts," she adds. "That's not always the case elsewhere."

Academic clusters provide more than ideas and staff for nearby biotechnology companies.

They can participate in collaborative research and furnish academic consultants for clinical trials.

Academic clusters provide more than ideas and staff for nearby biotechnology companies. "They can participate in collaborative research and furnish academic consultants for clinical trials," explains Frank Baldino, founder and CEO of West Chester, Pennsylvania, biotechnology company Cephalon. "You don't have to wait for them to get on a jet at exorbitant cost for a two-hour meeting." Patrick Scannon, founder of Berkeley, California-based Xoma, agrees. "Having the ability to interact with faculty is important," he says. "No matter what size you are, you don't have every specialty. University departments may have expensive instrumentation that biotechnology companies don't have or need for only a few months."

Universities don't represent the sole nuclei for the growth of biotechnology firms. Dyan Brasington, president of the High Technology Council of Maryland, points out that science based federal institutions around Washington, D.C., have helped to create a strong biotechnology cluster along Maryland's I-270 corridor which runs through Washington's northern suburbs. Companies in the corridor include the National Institutes of Health, the Food and Drug Administration, the National Institute of Standards and Technology, and the Walter Reed Army Hospital. Biotechnology companies in the New Jersey-Philadelphia region benefit from a high density of major pharmaceutical corporations. Kansas City plans to set up a biotechnology sector based largely on the Stowers Institute for Medical Research, an institution established by two cancer survivors that will open its doors in July of next year. "A lot of people in the community here see the Stowers Institute as providing the push to persuade biotechnology and pharmaceutical companies to come to Kansas City," says Nelson Pleau, the institute's chief administrative officer.

POLITICS AND ECONOMICS

State and local governments can play particularly prominent roles in developing clusters of biotechnology firms. "There are clearly some local government initiatives that try to draw high-technology business," says Eric Schmidt, a biotechnology analyst at New York City financial firm S. G. Cowen. "They include tax breaks and investing alongside companies." Some states go to great lengths to welcome biotechnology businesses. "It's boosterism backed by money and planning," says Carl Feldbaum, president of the Washington,

D.C.-based Biotechnology Industry Organization (BIO). "In North Carolina, a CEO arrives at the airport and goes straight to the governor's mansion. In Maryland, he gets to lunch with the mayor as well. They make it hard for the CEO to go home and not think Maryland is the place to go."

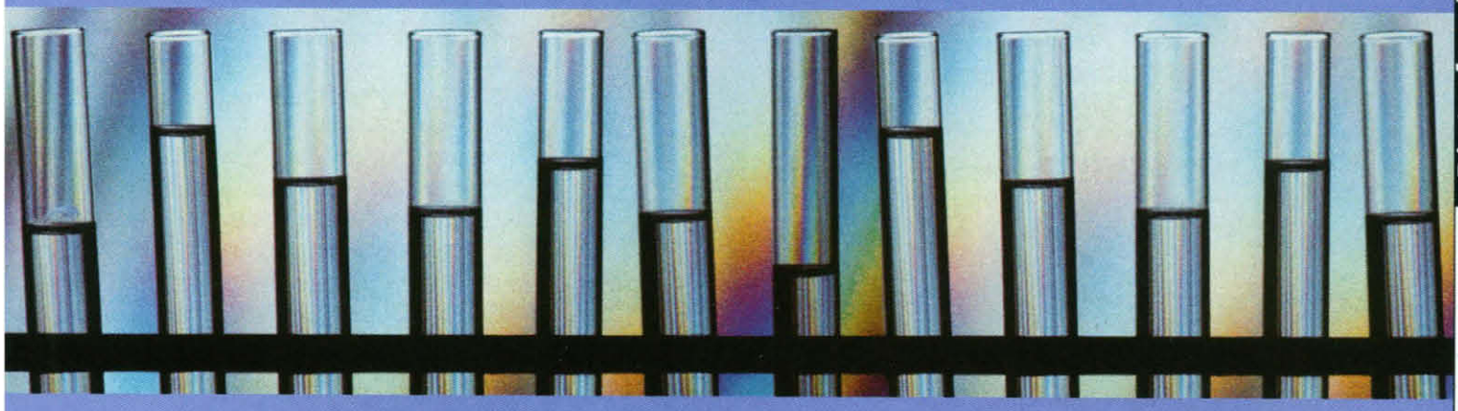
Canadian provinces have taken similar routes. "In Quebec, British Columbia, and Saskatchewan, you see deliberate fiscal and tax policies to attract biotechnology investment and companies," says Graham Strachan, CEO of Toronto-area company Allelix BioPharmaceuticals. "There has been a high level of collaboration among universities, the government, and industry to establish the biotechnology industry in Montreal," says Jacques Lapointe, president and COO of Biochem Pharma. "In terms of high-tech incentives, the Quebec-Montreal area has probably the highest R&D incentives in the civilized world. Quebec province has just moved from a two-year to a five-year tax holiday for scientists, proving its interest in bringing them in."

Government influence extends beyond simple tax breaks. Biotechnology firms need specialized and costly facilities that represent significant risks for construction companies. State and local governments can reduce those risks, with loan guarantees, zoning privileges, and reduced permit charges that help to stimulate development in underprivileged areas. The Charlestown Navy Shipyard, one of the most active biotechnology research centers in greater Boston, relied heavily on the active involvement of the Commonwealth of Massachusetts and the City of Boston.

The key to that involvement is a long-term view that extends beyond legislators' usual terms of office. "North Carolina is a beautiful example of a state that had a vision extending for several decades when it created Research Triangle Park about 40 years ago," says Bill Rastetter, CEO of IDEC Pharmaceuticals, of San Diego. "The state of California has to start thinking now about stimulating economic growth for 2020."

Government can smooth the path of biotechnology business in subtle ways. "Most biotechnology companies in San Diego County deal with just one municipality: the city of San Diego," says Rastetter. "So you have pretty consistent regulations. The city also has an ombudsman whose sole job is to work with biotechnology companies."

Enlightened government policies may help biotechnology companies save money, but no firm can get started or expand without money in hand, in the form of venture capital. Given a history of spectacular losses by biotechnology companies, obtaining that capital can prove difficult. Entrepreneurs agree that it helps to locate new or expanding companies close to sources of venture capital and investment banks with experience in biotechnology. That makes the Bay area, Boston, and Philadelphia-New Jersey, which have critical masses of venture capitalists, particularly attractive to start-ups. "The reason why so many biotechnology firms are in the Bay area is that the venture capital firms are here," says Charles Casamento, chairman, president, and CEO of RiboGene, a company founded in 1990 in Hayward, California. "I



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Biotechnology clusters provide more tangible benefits.

All companies... share the same practical needs for research space, equipment, supplies, business services, and personnel.

was shocked at how hard it is to raise money here," recalls Matt Megaro, president and CFO of Durham, North Carolina, company Trimeris, who had previously worked in the Bay area. "We had to focus everything on one product to create value against which we could get money," he explains.

Local access to capital is not essential, however. "The key for a venture capitalist is finding an investment that's going to make him money. If he has to go to Botswana to do it, and he's going to make money, he'll do it," says analyst Auerbach. "You don't have to be located in the proximity of capital," adds Mark Skaletsky, CEO of Waltham, Massachusetts, firm GelTex. "The key is communication. Financiers want you to keep in touch." That was the experience of Pharmacopeia. A West Coast venture capitalist provided seed capital for the company in 1993, recalls COO Lew Shuster. But the company set up shop in Princeton, New Jersey, close to the New York scientists who developed the combinatorial chemistry techniques on which it focuses, and convenient for the firm's founding scientists who joined Pharmocopeia from Merck.

STRENGTH IN NUMBERS

On the other hand, it does help biotechnology start-ups to locate near established firms in the same business. Of course, competitors who share the same turf must compete for personnel, capital resources, visibility, and influence. They must also face the potential loss of industrial secrets through migration of staff and local gossip. Nevertheless, clustering has considerable value for biotechnology firms. Most important, it permits them to spot the industry's strategic shifts at a speed impossible for isolated companies. "An industry cluster permits a group of biotechnology companies to become strategically successful together," says Ed Fritzky, chairman and CEO of Immunex, the company that introduced industrial biotechnology to the Seattle area.

Biotechnology clusters provide more tangible benefits. All companies in the business share the same practical needs for research space, equipment, supplies, business services, and personnel. Builders invest in research space more readily when they know that a neighborhood contains a large number of potential occupants. "We had a problem when we founded the company in 1989 because local landlords had little experience with biotechnology companies," reminisces Stanley Crooke, CEO of ISIS Pharmaceuticals in Carlsbad, California, several miles from San Diego.

Several local and regional industry organizations have played important roles in helping to negotiate group discounts for the materials and services necessary to run high-technology businesses. "Bio Commerce here in San Diego speaks with a credible voice on issues of local concern," says Rastetter. "One of the benefits of having a large number of biotechnology companies is the Massachusetts Biotechnology Council in Cambridge," adds Skaletsky. "It gives you a wonderful opportunity to exchange ideas with your peers. Even though we're competitors, we're struggling with the same issues."

Clustering also provides a focus for essential professional services. "It's not a trivial thing that in the Bay area there are a lot of legal firms and patent firms familiar with this type of operation," says Scannon. "Some of these firms have 20 years of experience in biotechnology patents." Indeed, adds fellow Bay-area executive Casamento, "all the services are here, from graphics to design to computers."

Clustering can even help to put biotechnology companies on the map, by attracting industry analysts. "Seattle is not a central location for visits by Wall Street analysts," says Steve Gillis, the founder of Immunex who is now chairman and CEO of Corixa. "In the mid-80s it was difficult to get the analysts to fly in. Now, the more companies there are, the easier it is for the newer ones to latch onto the coattails of those that were established earlier."

What can companies in out-of-the way locations do to attract interest? Proactively solicit the interest of analysts, suggests Eric Schmidt, "by sending them information, faxing press releases, and visiting them in New York City. It's also useful to have a good involvement with the local media and newspapers."

RECRUITMENT AIDS

Ironically, biotechnology clusters help individual companies recruit staff, particularly from overseas. Such recruits "probably want the security of knowing that, if things don't work out with company A, there are four or five other companies they can go to," explains Allelix's Strachan. "The more companies you have, the more willing people are to relocate there, as they know there are opportunities with other companies," says Robert Davis, chair of chemical engineering at the University of Colorado, Boulder, and co-director of the Colorado Institute for Research in Biotechnology. Indeed, working in a cluster reduces the risks of unemployment when, as often happens, a biotechnology company fails. "We have a human resource network within our biotechnology cluster that shares best practices and helps to redistribute people from companies losing contracts," says Brasington of the High Technology Council of Maryland. Stanford University's Gardner puts the issue in a broader context. "The cluster culture tolerates risk and accepts occasional failure," she says. "People can fail at a biotechnology company here in the Bay area and go on to live another day."

Personnel issues, in fact, loom large in any biotechnology company's decision to locate or stay in a specific region. The industry spends pro-

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portionately more on R&D than any other. Thus, it depends absolutely on supplies of skilled life scientists, from Ph.D.'s to lab technicians.

Research universities act as major sources of such supply. However, biotechnology executives recruit in several other institutions. "People with technical expertise are well trained by four-year and two-year colleges and technical institutions," says William Haseltine, CEO of Human Genome Sciences in Rockville, Maryland. "Local universities like George Mason and Maryland turn out a very strong product. And government agencies take the place of research universities elsewhere in supplying the best post-doctoral students." Volatility in the pharmaceutical industry has also helped technology businesses. "We've been the beneficiaries of several strategic alliances among pharmaceutical companies in the Philadelphia area," says Baldino of Cephalon. "All the mergers make available very good people who don't want to move."

Young biotechnology firms also need experienced executives. "Management is critical," says Strachan. "You need people who have done it before and who know drug development." Firms often fulfill that need by recruiting among other companies' personnel. Immunex takes the process a stage further. "We're developing linkages with local business schools to make sure that we have the right people coming in," says CEO Fritzky.

Several other factors can make the difference between success and failure in attracting and keeping scientists. Recruiters for companies in San Diego emphasize the region's spectacular climate. "We do our best recruiting in January and February," says Rastetter. "We bring them out here and wine and dine them outdoors, overlooking the Pacific." The Washington D.C.- Maryland locale meanwhile values its location at the center of the modern world. "Everyone comes to Washington," declares Haseltine. "We're at the world's crossroads." Executives in both Boston and San Francisco promote what they tout as their regions' superior cultural amenities. And companies on the edges of major biotechnology regions, such as ISIS and GelTex, point out the cost benefits of more remote locations. "We located in Carlsbad rather than La Jolla because we had no ties to the University of California, San Diego, and we felt that we could recruit people into the area because of lower housing costs," says Crooke.

LEADING LOCATIONS

Which regions have the greatest attraction for new and growing biotechnology companies? Most observers regard the Bay area as the prime center for the emerging industry, followed by Boston-Cambridge and San Diego. The Bay area's success "stems from a lot of factors," says BIO's Feldbaum. "It's the original cluster. It has a convergence of venture capital and technology transfer out of the state university system. It's the home of Genentech and other early biotechnology companies. Cambridge-Boston took a little longer to grow up, as Harvard, M.I.T., and other local universities were a little slower to recognize the need for easy technology transfers. But then they moved fast. San Diego has strong technology transfer, and it offers a good quality of life."

Other regions are working hard to catch up with the top three. Frequently, they rely on existing business infrastructure. Maryland's I-270 corridor, leapfrogging on federal agencies, is perhaps North America's fastest-growing source of industrial biotechnology. The Philadelphia-New Jersey region benefits from both a strong academic environment and a high density of large pharmaceutical corporations. "This is, in effect, having our collaborators and customers close by," says Jack Baldwin, chief scientific officer of Pharmacopeia. Hard-driving, ambitious companies such as Microsoft, Amazon.com, and Starbuck's give Seattle an attractive business aura. "Our area has a lot going for it, like Silicon Valley," says Fritzky. "There's an economic

energy that goes a step beyond the scientific ties." In North Carolina and the province of Quebec, governments are pushing the envelope in their efforts to attract biotechnology firms.

New regions are continually seeking a share of biotechnology business. The corridor that links the University of Colorado, Boulder and Colorado State University has already garnered several start-ups. Woodlands, Texas, outside Houston, has a strong academic ambience and plenty of political desire. New York City is slowly building up biotechnology, based on its medical centers and Wall Street. Cleveland, Kansas City, Oklahoma City, and Portland, Oregon, have their own ambitions. So do the states of Florida, Georgia, Illinois, and Minnesota. Common to all are a foundation of academic institutions with strength in science and local governments with the desire to attract technology business.

A MOVE TO MANUFACTURING

Regions new to the biotechnology game don't necessarily have to play on the same field as the established business centers. At present, most decisions about locating biotechnology companies focus on R&D activities. But eventually, says BIO's Carl Feldbaum, "there comes a time when companies have a product and choose to manufacture it themselves. In deciding where to locate your manufacturing plant, different factors come into play. The work force is different. The manufacturing plant does not necessarily need to be co-located with the company's headquarters or research facilities. At times, the advantages of locating elsewhere are so great that they overcome the advantages of co-location."

IDEC chose to keep its manufacturing next to its R&D center in San Diego — although not without plenty of debate. "If I wanted to establish expertise and core competency in biologics manufacturing, I'm not sure I would pick California as the optimal site," explains Rastetter. "The academic institutions tend to be oriented more to academic science than to applied science. Land costs, utility costs, and labor rates are all high. So are construction costs and tax rates. Water is scarce." Nevertheless, Rastetter decided that splitting manufacturing off from the 400- employee company would cause even more problems. "For a small company, the need to put everyone together and keep a critical

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mass is strong," he asserts. "The nature of the corporate entity is such that you lose strength if you split up a 1,000-person company."

GelTex, in the Boston area, solved the problem in another way. "We contract out our manufacturing," says Skaletsky. "So our main concern is hiring the right people and promising not to move them."

Biochem Pharma took yet another direction. It decided to place both its development center and its production center for vaccines outside its main R&D center in Montreal. "We inaugurated a state-of-the-art production facility early last year in Quebec City," says Biochem Pharma's Lapointe. "And we started a development center in Boston late in 1998. We chose Boston because, while there's excellent vaccine research in universities around Montreal, there's not much expertise in development."

The move to manufacturing as the biotechnology industry becomes better established should ultimately benefit more than the traditional centers of biotechnology. "This has provided an opportunity for a number of other states," says Feldbaum. Thus, the mid-Atlantic states are aggressively seeking manufacturing business from biotechnology companies based in the East. On the West Coast, Oregon, Washington, and Idaho are beginning to compete for the manufacturing facilities of California companies. The Colorado Advanced Technology Institute (CATI), a state science and technology development agency, is working on developing a biotechnology infrastructure that extends from R&D to manufacturing. Departments of biology, chemistry and chemical engineering at Colorado State University and the University of Colorado, Boulder provide a steady stream of graduates with skills necessary for biotechnological manufacturing, says Charles Ferris, director of CATI's bioscience programs. They are also developing Ph.D. programs in process engineering. "You need the scientific side in the engineering disciplines to be able to do processing," points out Ferris.

What advantages do the newcomers have? "These states," says Feldbaum, "can offer better breaks than the traditional centers of industrial biotechnology."

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

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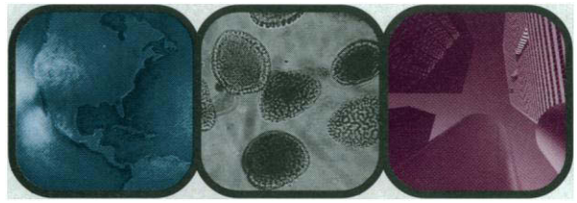

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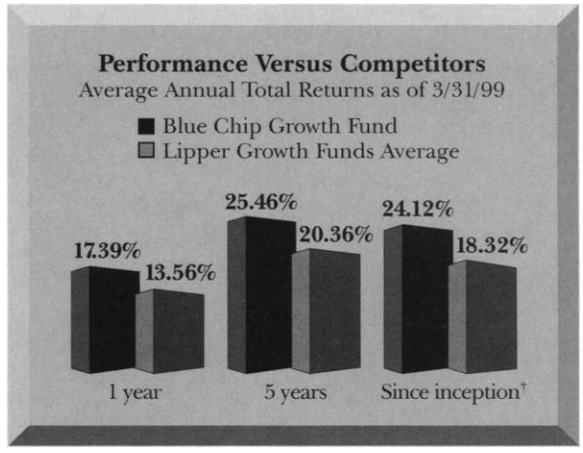

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CAREERS IN BIOTECHNOLOGY & PHARMACEUTICALS

by Michael Woods

Y2K & BEYOND: Agribiotech, DNA Chips, Genomics, and Much More

Ask recruiters and scientists about the biotechnology job market, and they often describe it as exciting and dynamic. Demand for people with the right degrees and skills remains strong in traditional drug discovery and development areas. New demand is emerging as biotechnology spreads its wings, placing more emphasis on agricultural and environmental products and emerging fields like DNA chip technology. Agribio companies need scientists to find creative ways of applying biotechnology in environmental remediation, crop improvement, and "pharming." Investment in DNA chip technology for molecular diagnostics and other applications is heating up demand for engineers and life scientists who can work on the interface between two fields that were once poles apart. Other factors, including the end-of-the-pipeline effect, are exerting leverage on the job market. As biotech companies take products to market, need for personnel grows in areas like the process sciences, product development, and marketing.

What fields are hot or heating up? Where are the jobs and what does it take to land one? For answers, we turned to scientists at Motorola, Inc.'s BioChip Systems Unit; the U.S. Department of Agriculture's Agricultural Research Service; Glaxo Wellcome Inc.; and SmithKline Beecham. Also, we dropped by Tringali Associates to get the headhunter's perspective.

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Sean Gallagher, Motorola, Inc. BioChip Systems Unit—Career Opportunities on the Interface of Life Sciences and Engineering

Two of the 20th century's most powerful technologies—molecular biology and semiconductor fabrication—have joined forces to create the "biochip," biology's version of the computer chip. In doing so, they are opening up a wide range of new biotech careers, according to Sean Gallagher, director of biochip development for Motorola Inc.'s BioChip Systems group in Phoenix, Arizona.

"The fields in demand cover a huge spectrum in engineering and the biological sciences," Gallagher said.

Gallagher views the topic from the perspective of a scientist who helped foster the biochip industry's emergence. With a Ph.D. in plant science and years of experience in protein and DNA separations, instrumentation development, and now DNA chips, Gallagher helped start Motorola's new venture. It builds on the firm's expertise in electronics and chip microfabrication, and pairs a very fruitful collaboration in the biotech industry—life scientists and engineers. Motorola also has forged partnerships with other firms that pioneered molecular diagnostics.

"It's particularly important for the engineering community, and other personnel outside the boundaries of traditional biotechnology, to understand how careers in biotech are evolv-

Michael Woods writes frequently on the biotechnology and pharmaceutical industries.

Continued ➢

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Microbiologist

Ph.D. level scientist needed in San Diego to support the development and implementation of a comprehensive screening strategy for discovering new microbe-derived genes for crop protection. The successful candidate will have experience in the isolation, enrichment and growth of microbes from diverse environments. **Department Code: IAGD-3**

Microbiologists

B.S., M.S., and Ph.D. level scientists needed in Indianapolis with expertise in plant pathology to join our microbial screening group involved in identifying novel enzymes and protein actives targeted against crop diseases. **Department Code: IAGD-4**

Entomologists/Nematologists

Scientists required in San Diego at the B.S. and M.S. levels with experience in Entomology or Nematology to evaluate product concepts for plant protection. **Department Code: IAGD-5**

Entomologists

Ph.D. level to join our Indianapolis gene discovery and transgenic plant evaluation groups. Responsible for current and new programs directed at the discovery of novel genes for insect control, evaluating gene expression and modeling strategies to maximize gene durability. **Department Code: IAGD-6**

Protein Biochemists

Positions at the Ph.D., M.S. and B.S. levels in San Diego will be responsible for research in protein isolation and characterization, protein scale-up, the newly evolving field of proteomics and antibody-based development. **Department Code: IAGD-7**

Plant Molecular Biologists & Biochemists

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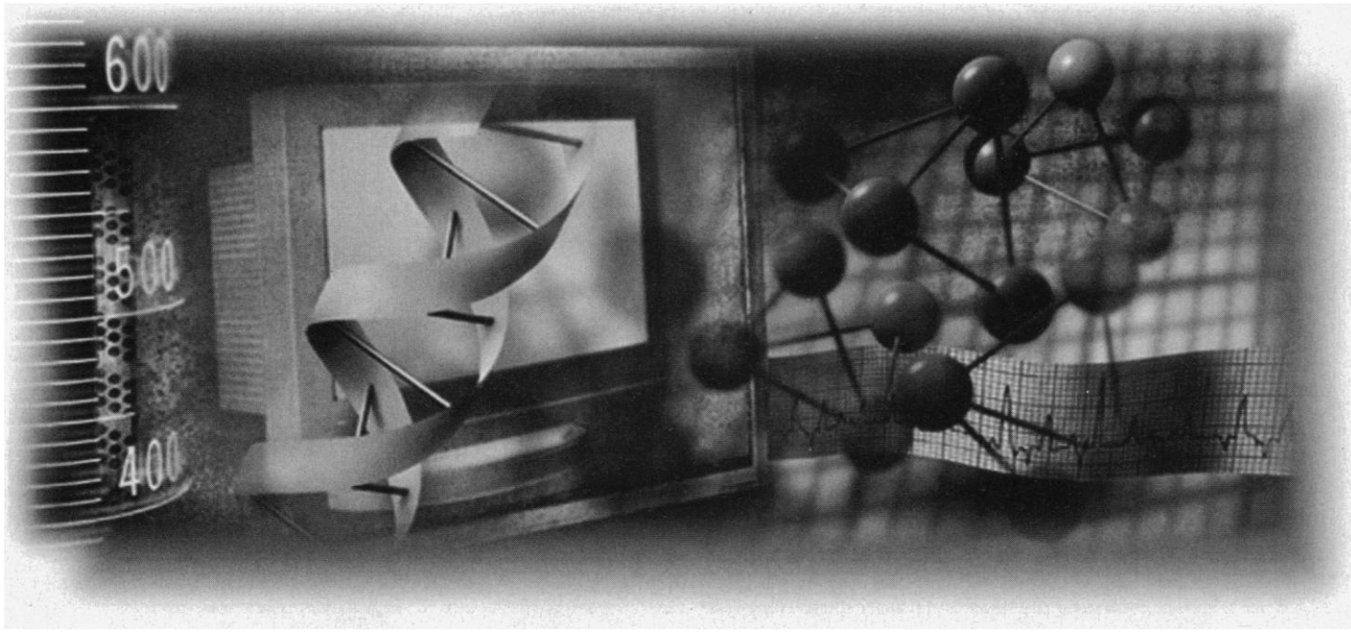

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ANTIVIRAL THERAPY

Associate Scientist/Scientist – HCV/HIV Antiviral Research

Requires a BS degree in Molecular Biology or related discipline and 4-7 years of related experience or an MS degree and 2-4 years' experience. Background must include expertise in cloning and expression using various systems, protein purification and characterization. Familiarity with enzymology, virology and cell culture techniques is a plus. **(Job Code: XHXDD9902)**

IMMUNOLOGY

Principal Scientist

Requires a PhD with 1-3 years of postdoctoral experience with a background in T cell activation or leukocyte trafficking relating to transplantation and autoimmune disease. Demonstrated skills in cellular immunology techniques such as isolation and functional characterization of lymphocyte and hematopoietic cell subpopulations, coupled with experience in animal models of immune disorders are required. Experience in molecular immunology and biochemistry techniques, including plasmid construction, DNA sequencing, FACS analysis and ELISA assays is highly desirable. The successful candidate will also provide *in vitro* and *in vivo* immunology expertise to our therapeutic discovery projects and demonstrate a strong desire to play a key role as part of a team-oriented program. **(Job Code: XHXDD8116)**

COMPUTATIONAL CHEMISTRY

Senior Scientist

We seek a talented Molecular Modeler to join our Computational Chemistry group. Members of this group work closely with synthetic and structural chemists to advance molecules as drug candidates. High throughput screening, combinatorial chemistry, medicinal chemistry and structural chemistry groups have been productive in numerous projects. Recently, Structural and Computational Chemistry have played key roles in anti-viral and anti-cancer drug discovery.

This position requires a PhD in Chemistry, Biophysics or a related discipline and expertise in ligand-based drug design methods including SAR analysis of large data sets, design of combinatorial chemistry libraries and chemical diversity analysis. Postdoctoral experience is preferred. Strong communication and programming skills along with an ability to work well on multi-disciplinary teams are essential. **(Job Code: XHXVMSW)**

DRUG METABOLISM AND PHARMACOKINETICS

Principal Scientist – Drug Metabolism – Pharmacokinetics

Requires a PhD in Pharmacokinetics, Pharmacology or Biochemistry with 3-6 years of experience preparing scientific submissions and excellent writing skills. Responsibilities will include preparing summaries of drug metabolism and pharmacokinetic data from non-clinical studies, as well as coordinating project tracking on pre-clinical Drug Metabolism and PK studies. **(Job Code: XHXDD9930)**

Senior Scientist – Exploratory Drug Metabolism

Requires a PhD in Pharmacokinetics or Pharmaceutical Sciences with at least 2-3 years of postdoctoral/industrial experience. Background must include experience in pharmacokinetic analysis related to drug discovery and in-depth knowledge of interpreting results. Will be responsible for performing pharmacokinetic analysis in exploratory drug metabolism in support of drug discovery. **(Job Code: XHXDD9923)**

Senior Scientist – Drug Disposition

Requires a PhD in Enzymology or related area, 1-3 years of relevant postdoctoral experience in drug metabolism research, a strong analytical chemistry background (including the use of HPLC, CZE, LC/MS) and computerized data acquisition experience. Will be responsible for conducting metabolite profiling and characterization of protein-based compounds as well as supplying support for protein binding and gene therapy drug disposition studies. **(Job Code: XHXDD9927)**

Senior Scientist – Drug Disposition (In Vivo Studies)

Requires a PhD in Pharmacology, Biopharmaceutics or related area with 1-3 years of relevant *in vivo* experience in drug metabolism. Ability to conduct drug disposition studies in support of drug development is a must. Will be responsible for study design, study execution, report preparation, *in vivo* model development and monitoring of drug disposition studies on high priority projects. **(Job Code: XHXDD9926)**

Associate Scientist – Exploratory Drug Metabolism

Requires a BS (MS preferred) degree with 2+ years of experience. Background must include proficiency in administering compounds *in vivo*, experience in dosing by various routes of administration and knowledge of sample collection techniques. **(Job Code: XHXDD9954)**

Assistant Scientist - Drug Metabolism

An immediate opening is available in our *in vitro* Drug Disposition Group where you will participate in a variety of studies. These will include analytical method development, analysis of biological samples for drug candidates and metabolites in addition to conducting *in vitro* studies. To qualify you will need a BS degree in a biological science and 2-4 years of experience or an MS with 1-2 years of experience in drug metabolism and bioanalytical method development. Ability to use modern bioanalytical techniques (HPLC, GC) a must. Knowledge of *in vitro* techniques and computer skills are desirable. **(Job Code: XHXDD9929)**

PULMONARY RESEARCH

Postdoctoral – Allergy

Requires a PhD in a relevant discipline, Pharmacology preferred, and an established publication track record. Experience in *in vitro* and *in vivo* models of human airway diseases and experience in microscopy is highly desirable. Background should include expertise applicable to diseases such as asthma, rhinitis and pulmonary pharmacology. **(Job Code: XHXTM99304)**

Principal Scientist

Requires a PhD in Molecular Biology or Biochemistry and a minimum of 2-4 years' postdoctoral experience. Background must demonstrate expertise in molecular biology and gene/protein expression technology. Experience in functional genomics including bioinformatic sequence analysis of databases and microarray hybridization is desirable. A strong familiarity with research involving at least one of the following is also desirable: signal transduction (protein kinases/phophatases), G protein-coupled receptors, proteases, leukocyte trafficking (adhesion molecules) and/or transcription factors. **(Job Code: XHXDD9112)**

Principal Scientist

Requires a PhD in Physiology, Pharmacology or a related area and some postdoctoral training. Previous experience in physiology, pulmonary pharmacology, ion channel measurements or research in pulmonary inflammation including cytokines and chemokines is desirable. This position will concentrate on various aspects of lung function with the goal of developing therapeutic agents for airway disease. Responsibilities will include performing pharmacology studies emphasizing *in vitro* or *in vivo* measurement of lung function. **(Job Code: XHXDD9115)**

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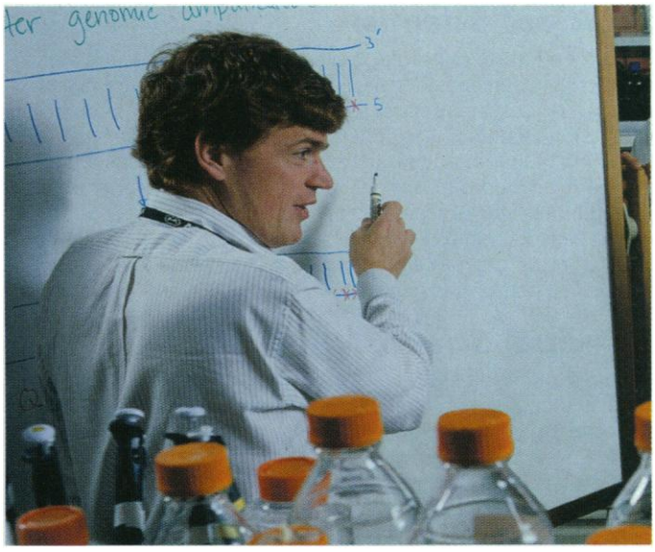
Using Science for Human Advantage

ing," Gallagher explained. "This next stage in biotechnology instrumentation and product development will require a melding of engineering, software, manufacturing, biological assay development, genetics, and other talent into design, and research and development efforts. Individuals in these fields with no direct experience in biotechnology frequently are responsible for fundamental contributions."



Sean Gallagher: Motorola, Inc. BioChip Systems Unit

Just as computer chips perform mathematical operations, "biochips" monitor gene expression and carry out thousands of biochemical reactions. If the visionaries are right, biochips will be microfabricated by the million like computer chips, and spawn a new 21st-century industry with profound implications for drug development, molecular diagnostics, agricultural biotechnology, and other fields.

From an instrumentation standpoint, opportunities exist at all levels of engineering, everything from systems engineering to computer sciences, electrical engineering and mechanical engineering, Gallagher said. In the biological sciences, the hot areas are gene mapping, genome analysis, molecular diagnostics, gene expression analysis, mutation analysis, and polymorphism analysis. Bioinformatics is also critical to analyze and mine the vast amount of data generated with these new technologies.

Other opportunities exist for individuals with skills in what Gallagher describes as "packaging" and microfluidic technology. Biochip developers must shrink entire chemistry and biochemistry labs to micro-dimensions, creating a kind of "lab-on-a-chip." Biochips for medical diagnostics would be a mass-production mainstay in physician's offices, for instance. Available at a low cost, biochips would be used to check genetic variations that influence patient drug response, gene expression, and other factors.

"Packaging involves putting diagnostic elements like DNA arrays on a chip and integrating everything into a stable system that can be read by instrumentation," Gallagher said. "Packaging and integrating those packages and instruments is a very hot field." Needed will be individuals with knowledge and skills in materials science, systems engineering, manufacturing automation, microfluidics, and other fields.

Gallagher advised job candidates to come to interviews with a good appreciation for the company's technology. That can be especially important for cross-discipline applicants, such as life science graduates seeking jobs at electronics firms, or engineers at biotech companies. They're setting foot into a new world, and tend to have very little background knowledge of the industry or the particular company. World Wide Web pages, he noted, are a prime source of information. Talks with current employees are an excellent way to sense the corporate culture.

Amy Murnane, SmithKline Beecham—"...Cheminformatics, Bioinformatics, Genomics..."

Amy Murnane is director of microbial and cell culture research and development in biopharmaceutical development at SmithKline Beecham in Philadelphia. Over the past few years, SmithKline Beecham has invested heavily in genomics and bioinformatics research. Murnane manages activities related to microbial and cell culture process development and discovery support.

"The really hot career fields right now are cheminformatics, bioinformatics, and genomics," Murnane said. "Scientists entering these areas could have a variety of academic backgrounds." Molecular biology and gene expression, for instance, would be suitable for genomics. For cheminformatics, recruiters look for skills in chemistry and perhaps a computer science background. Bioinformatics usually requires life sciences degrees such as biology or biochemistry, also in combination with computer science courses.

How important are computer skills? "Absolutely critical for individuals joining research programs in most fields of biotechnology," Murnane responded. Basic skills for an entry-level scientist would include ability to work with the major computer operating systems and knowledge of common data management, graphics, and word processing software.

Industry is placing great emphasis on more effective and efficient drug discovery, Murnane pointed out. Companies want to move the most promising drug candidates out of the lab, and toward the clinic, faster. One approach has involved increased use of statistics in experimental and process design. Statistics can help reduce the number of experiments needed to get valid data, and assure sound analysis of the data. Murnane encouraged students to get a strong, basic background in statistics. Knowledge of statistics for experimental design and statistical analysis, for instance, would be valuable.

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Creating A Paradigm for World Innovation

Paradigm Genetics, Inc., applies high throughput genome-based technologies to enhance worldwide food and fiber production. As one of the first companies to apply functional genomics in the agricultural arena, we are developing unique and powerful computer applications for analyzing functional genetic information. At Paradigm, we are exploring new scientific and technological frontiers. We are currently seeking highly motivated and qualified people to join our Research Team in **Research Triangle Park, NC.** Openings are available for the following positions:

Head, Data Systems and Analysis

This position plans, deploys and supports a diverse array of biological databases in a fast-paced research and development environment. The successful candidate will have experience in data warehouse and data mart planning and deployment; extensive experience in Oracle databases and object-oriented enterprise-wide database environments; proficiency in PL/SQL and CORBA technology; and proven experience in the development of data mining and automated data analysis tools. Requires a BA/BS degree, with a minimum of 10 years of experience in enterprise-wide database planning and development, and administration. Job Code: SCIINF136P

Director of Software Engineering/Product Development

This position plans, coordinates and manages the development of the flagship product from Paradigm Genetics, Inc., AgDB. The successful candidate will have experience successfully leading, directing and managing the development of a significant commercial software product; a thorough understanding of project planning, resource management, project budgeting and QA/QC; ability to manage a medium sized engineering group, communicate with the Database and Bioinformatics groups, and update senior management on progress. Position also requires experience in Software Engineering Design, application and management. A MS or Ph.D certification in software Engineering or equivalent, and experience in a scientific research and development environment or Biotechnology preferred. Job Code: SCIINF157P

Manager, Plant Molecular Biology and Genetics

This position will be responsible for all aspects of management of the Plant Molecular Biology and Genetics Group, and supervise groups involved in high throughput gene discovery, gene cloning, plant transformation and gene modification systems. Will also develop and implement novel technologies. The successful candidate will have a Ph.D. in Molecular Biology, Genetics or Biotechnology and extensive experience in the plant research area and at least 5 years of experience in supervisory position is preferred. Job Code: SICIRG149P

Ph.D. Level Position in Plant Molecular Biology

A recent Ph.D. or individual with postdoctoral experience in Molecular Biology or Plant Molecular Biology is sought to develop methodology for our high-throughput functional genomics platform. We are looking for highly motivated individuals to develop novel transcriptional control methods, to develop gene expression and gene modification systems, and to improve mutagenisis and transformation technology. Job Code: SCIPRG150P

Robotics Engineer

This position addresses areas in each of the Company's research groups (DNA sequencing, Plant, Fungal, and Biochemistry) that could potentially benefit from custom-designed robotics, or to customize existing instrumentation for more productivity. Will be a part of the Laboratory Information Robotics and Automation group that will include scientists for validation and computer scientists to facilitate software development. The successful candidate will have a BS in Mechanical or Electrical Engineering or Computer Science, and 3-5 years of experience in the field of robotics, preferably in the area of high throughput laboratory applications. Job Code: SCIINF140P

Analytical Chemist/Biochemist

This position will be responsible for implementing analytical procedures in the Biochemistry department. The primary role will be research in metabolic analysis using state-of-the-art instrumentation such as GC, LC-MS, and NMR. A solid understanding of biochemistry and metabolism preferred. Job Code: SCIBIO132P

Successful candidates will be offered a competitive salary and benefits package, stock options as well as an exciting team environment with emphasis on achievement and career development. For consideration, please include the job number and your salary requirements on your cover letter and submit a resume to: **Paradigm Genetics Resume Processing, P.O. Box 541258, Waltham, MA 02454-1258; or Email: paradigmstaff@hiresystems.com** EOE

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A healthy vision.

As a world class leader in Research and Development, SmithKline Beecham continues to pioneer innovative pharmaceutical and healthcare products and services at our state-of-the-art suburban Philadelphia facilities. We have the following opportunities available.

Collegeville and King of Prussia, PA

Analytical Scientist- Team Member

Working in our Pharmaceutical Technologies Department you will work within a small team utilizing advanced analytical techniques to characterize the solid state properties of drug candidates; and maintain awareness of new trends in analytical chemistry. You will also develop techniques that will allow the prediction of the effects that variations in drug solid state properties have on processing; act as a source of technical expertise for the Product Teams; and aid in problem solving. Presenting research results at external meetings, and interacting with clinical, manufacturing and other development functions is also required. You must possess a PhD in Chemistry, Engineering, Pharmaceutics or related discipline with about 10 years of relevant pharmaceutical experience; and have fluent knowledge of current analytical techniques for assessment of solid state properties of particulate materials. Thorough knowledge of organic chemistry; familiarity with computers for storage and manipulation of data; and an experimental background in spectroscopic and chromatographic methodologies is highly desirable. (Ad Code: 990280)

Collegeville, PA

The Molecular Virology and Host Defense Department has two exciting positions in research projects, aimed at the discovery, evaluation and development of novel therapeutic agents for human viral infections using animal models.

Viral Immunology Scientist

You will assist in the development of a respiratory virus inflammation model, and may apply virological, immunological, molecular, and biochemical skills as a member of a multi-discipline team. You must possess a good practical and theoretical understanding of Pharmacology, Molecular Biology, Immunology, or Virology, equivalent to a BS degree, as evidenced by appropriate internal or external post-graduate experience or relevant qualification. You must also possess strong animal handling skills. Expertise with small animal models of respiratory viral infection, or pulmonary inflammation as well as tissue culture and immunology techniques is preferred. (Ad Code: 990436B)

Biologist - *In Vivo* Research

You will assist in research, that will include model development, on novel therapies for neurotropic viral diseases using animal models of infection. You should possess a good practical and theoretical understanding of animal models of infectious diseases, with minimally a BS and 3-5 years of experience in Virology, Immunology or other appropriate discipline. Candidates with *in vivo* pharmacology experience may also be considered. Technical expertise in a wide variety of techniques used in laboratory animal studies is essential. Experience in cell culture, histology or immunology is preferred. (Ad Code: 990478B)

King of Prussia, PA

PhD Scientist- Pulmonary Pharmacology

You will identify and pursue discovery targets especially in the area of lung remodeling and repair; and utilize existing and new technologies to examine the role of repair processes in the pathophysiology of chronic lung diseases. You will also establish new *in vitro* and/or *in vivo* models to support drug discovery targets in Pulmonary Pharmacology. You must possess a PhD in Pharmacology, Cellular Biology or Molecular Biology, and 2 years post-doctoral experience in pulmonary research. Work in lung repair is also preferred. Knowledge of current molecular and cellular biological techniques is also necessary. (Ad Code: 990566C)

PhD Scientist- Pulmonary Pharmacology

You will participate in drug discovery in the area of pulmonary research with emphasis on mucus biology and lung remodeling. You will also utilize established and new technology to identify and progress new molecular targets for pulmonary disease. Establish new *in vivo* and *in vitro* model systems and assays to facilitate both on-going and new research efforts in the Department. You must possess a PhD in Biological Science, and 2 or more years of post-doctoral experience in pharmacology, physiology or a related field. Experience in the pharmaceutical industry is preferred. Expertise in pulmonary research and current "state of the art" methodologies in biochemistry and cellular biology is also required. (Ad Code: 990562C)

Protein Biochemist - Isolation of Novel Peptides/Proteomics

Our Protein Biochemistry Department is seeking an individual with experience in isolation of novel receptor ligands, including knowledge and application of methodologies for preparation and screening of peptide libraries prepared from natural sources and/or experience in proteomics, including purification and identification of protein-protein interaction partners. The successful candidate will apply known and new approaches to the identification of proteins that interact with proteins of therapeutic interest, including affinity capture, 2D gel electrophoresis, etc. You will also apply known and novel approaches to extraction of peptides from tissues of interest, fractionation of peptide libraries and screening for receptor ligands. You must possess a PhD in Biochemistry, Chemistry, Enzymology or a closely-related field and have several years of recent and relevant experience in studying receptor ligands. Experience in proteomics is desirable. (Ad Code: 990479)

SmithKline Beecham is dedicated to an innovative workplace and supports you with career long opportunities and learning. We offer a competitive benefits and compensation package. To be considered for these suburban Philadelphia opportunities, please forward your scannable resume to: SmithKline Beecham, c/o National Resume Processing, (Ad Code), P.O. Box 1070, Burlington, MA 01803. Indicating Ad Code is essential. For a full listing of current opportunities, or to submit a resume online, visit our website at www.sb.com/careers

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SB

SmithKline Beecham

Pharmaceuticals

At Monsanto, we share a common goal - to help people lead longer, healthier lives. We are pioneering the use of life-science technologies to understand how the connections between human health, nutrition and agriculture can be used to develop products to improve the quality of life for everyone, everywhere. To achieve this goal, we are selectively hiring the best and the brightest people in the world - people who can make a difference and want to leave their mark. Can you see yourself working on our dream of helping to improve food, health and hope in the world? Do you think about what you can achieve and the difference you, personally, can make? All of us at Monsanto ask these questions daily. It's what brought us together and keeps us together. Imagine the possibilities - a better world, healthier families, a more enjoyable life. We are a team with a dream, and we would like you to be a part of it.

LIFE SCIENCE INFORMATICS

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

Bioinformatics Team Leader

As a key member of the Science and Technology Core Capability Team, you will ensure that Monsanto builds and maintains a world-class effort in bioinformatics and remains at the cutting edge of technology. In this instrumental position you will lead the effort to educate Monsanto's scientific community in the use of bioinformatics tools through teaching, seminars, and writing internal articles.

We require a Ph.D. in Molecular Biology, Molecular Genetics, Biochemistry, Biostatistics or Computer Science. In addition, the qualified candidate will have 5+ years experience in bioinformatics or chemical informatics and a proven track record of advancing the understanding of the human, animal, microbial or plant genome. A record of publishing and experience in a commercial environment would be advantageous. **Ad Code: 99-0309**

Bioinformatics Scientist

The Bioinformatics team supports the development and implementation of high-speed, high-throughput information and biology technologies, which comprise Monsanto's rapidly growing Genomics initiative. Your primary responsibility will be in the area of DNA polymorphism analysis. You will be responsible for processing and analyzing sequence data and molecular marker data. In addition, you will oversee DNA sequence data and analysis pipeline.

We require a Ph.D. in Molecular Biology, Genetics and 2 years experience in bioinformatics with a strong biology and computer background, especially in generating useful information from massive output of data generated by sequencing, genetic fingerprinting, mapping positional cloning, or transcriptional profiling efforts. An in-depth knowledge of bioinformatics tools and a demonstrated skill in a programming language such as C, C++, Java, or PERL are a must. **Ad Code: 99-0315**

Scientific Programmer

Work to support bioinformatics research and applications. Responsibilities include designing, implementing, and maintaining bioinformatics programs, databases, and web pages. This will require you to work closely with scientists and software developers to provide data analysis solutions in the area of sequence analysis and data mining. You must have a BS in a scientific or IT related discipline and a minimum of 3-5 years related experience. Strong development experience in PERL, Oracle/SQL, and HTML in UNIX environments is required. Knowledge of CGI and JAVA servlets programming a plus. Understanding of biological sciences desirable. **Ad Code: 99-0253**

Web Programmer

In this position you will design, implement, test and maintain both web-based software and non-web software utilities using a variety of programming languages and tools. In addition, you will identify and document customer requirements and enhancement requests while documenting software requirements and design. We require a Bachelors degree in Computer Science and 3-5 years of work-related programming experience. Knowledge and experience using one or more of the following programming languages in a work-related environment: C, C++, PERL and Java a must. **Ad Code: 99-0599**

For fastest consideration for the above 4 positions, please submit your resume in scannable format to: **monsanto@aon-hros.com, ad code _____ (select from above), on your subject line and cover letter for expedited review. Or mail to: Monsanto-(ad code), PO Box 1262, Findlay, OH 45840.** You will receive a postcard acknowledging receipt of your resume.

NUTRITION & CONSUMER

Monsanto's Nutrition & Consumer sector offers opportunities to work with highly motivated people who are leaders in scientific discovery and development. For our openings in various parts of the country, we are seeking professionals with excellent communication skills and the ability to work effectively in a team environment.

Animal Physiologist

As a member of a team engaged in enhancing human health through molecular nutrition, you will develop and implement protocols for animal studies designed to assess the effects of various nutrients on cardiovascular disease and disease risk factors. You will interact with internal scientists and external labs to complete studies that support the commercialization of nutritional supplement products. Other tasks include analyzing data and presenting conclusions to project teams.

You must have an MS in Physiology, Pharmacology or a related life sciences discipline and 3-5 years experience in performing animal surgical models. A BS with 5+ years experience is also acceptable. Experience in animal models of cardiovascular disease and hypertension preferred.

For fastest consideration for the above position, please submit your resume in scannable format to: **monsanto@aon-hros.com, ad code 99-0970 on your subject line and cover letter for expedited review. Or mail to: Monsanto-99-0970, PO Box 1262, Findlay, OH 45840.** You will receive a postcard acknowledging receipt of your resume.

Ph.D. Molecular Biologists/Biochemists

Prime opportunities for Doctorate-level Molecular Biologists and Biochemists with at least two years of postdoctoral experience in academic or industrial environments. The ideal candidate will have strong leadership skills as well as knowledge in metabolic biochemistry, heterologous gene expression, and genomics. **Ad Code: MBPhD-NC**

BS/MS Molecular Biologists/Biochemists

We are seeking Molecular Biologists and Biochemists who have at least two years of research experience in academic or industrial laboratories. Knowledge in one or more of these areas is preferred: metabolic pathways, protein purification, development of enzyme assays, gene regulation, cloning, heterologous gene expression, RNA and DNA manipulations, and PCR. **Ad Code: MBBS-NC**

BS/MS Analytical Chemists

For this position, we seek Analytical Chemists with a BS or MS degree in Chemistry and experience in modern chromatography and mass spectrophotometric analyses of metabolites. Knowledge of metabolic pathways, biochemistry, or molecular biology a plus. **Ad Code: AC-NC**

BS/MS Applied Geneticists

We are currently seeking goal-oriented individuals with BS or MS degrees to be responsible for plant transformation, genetics, plant growth and maintenance, and computer database record keeping. Experience with Arabidopsis is desired. **Ad Code: AG-NC**

For consideration for the above 4 positions, please send your resume to: **Monsanto, Ad Code:_____(select from above), 800 North Lindbergh Blvd., Mail Zone: O3E, St. Louis, MO 63167; Fax: 314/694-7729.**

PHARMACEUTICAL SECTOR

Genetic Models Group Leader

In order to strengthen our efforts in target validation we seek a highly creative and motivated scientist to build and provide leadership to a core functional genomics group. The primary focus will be to design, construct and successfully incorporate transgenic mouse models and other model organisms where appropriate into both target discovery and validation programs. The selected candidate will be a Ph.D. level scientist with expertise in mouse models of disease (both genetic and transgenic) with proven leadership and technical abilities. You will work within a multidisciplinary drug discovery team to address target validation challenges in inflammation, cardiovascular and oncology-focused research. Excellent communication and interpersonal skills are essential. **Ad Code: TL-PM**

Bioinformatics Group Leader

We seek a highly motivated and experienced bioinformaticist to provide leadership to a core bioinformatics and computational biology group. Must be a Ph.D. level scientist with significant bioinformatics experience. The individual will work closely within a multidisciplinary team focused on providing and integrating bioinformatic analyses to address therapeutic challenges in inflammation, cardiovascular and oncology-focused research. This position would also integrate into a large network of cutting edge bioinformatics and information technology groups within Monsanto. These groups will provide systems, database and programming support to ensure the success of the bioinformatics scientists. Excellent communication and interpersonal skills are essential. **Ad Code: BGL-PM**

Bioinformatics Scientists

We seek several highly motivated and experienced bioinformatics scientists to work closely with molecular biologists and multidisciplinary drug discovery project teams. This will involve providing bioinformatic analysis to address therapeutic challenges in inflammation, cardiovascular diseases and oncology. You will also provide expert bioinformatic analyses of gene sequence information, array-based gene expression studies, and protein structure information while analyzing large complex data sets using Blast, Smith-Waterman and other GCG tools. This will include writing small custom programs in PERL, C++, Java or Oracle as needed. Candidates will also be expected to develop independent research projects within Searle's therapeutic focus. Successful candidates will possess a Ph.D. with two years postdoctoral experience or the equivalent and expertise in sequence and protein structure similarity searching, data mining and presentation, biological interpretation of sequence information and scientific programming in a UNIX operating environment. Good communication and writing skills are essential. **Ad Code: BIO-PM**

Molecular Biologists (Ph.D. level)

Strong candidates should possess a Ph.D. in molecular biology with at least two years postdoctoral experience or the equivalent and the ability to initiate and conduct independent scientific research. Expertise in genomics-based technologies such as expression profiling, high throughput molecular biology, database mining, target validation and models systems is required. You will be expected to work in a results oriented, multidisciplinary team environment to identify and develop novel approaches to address therapeutic challenges in inflammation, cardiovascular diseases and oncology. Preferred candidates will have strong computer skills including experience with Excel and Word for PCs, with GCG computer package for UNIX. Excellent communication and writing skills are also essential. **Ad Code: MBPhD-PM**

Molecular Biologists (BS/MS level)

We have several openings for Research Biologists who will be responsible for molecular biology and gene expression research and new technology implementation which will be focused on the identification of novel therapeutic approaches in inflammation, cardiovascular and oncology disease areas. We require a BS or MS in biological sciences with 3+ years of molecular biology laboratory experience in a pharmaceutical or academic research setting. Laboratory experience with cDNA library construction, DNA sequencing, PCR analysis, RNA quantitation analysis, DNA mutagenesis, expression plasmid construction, eukaryotic and prokaryotic recombinant protein expression systems, western analysis, and ELISA development is preferred. Excellent communication and team-based skills are a must. Preferred candidates will have strong computer skills including experience with Excel and Word for PCs, with GCG computer package for UNIX. **Ad Code: MB-PM**

For consideration for the above 4 positions, please send resume to: **Monsanto Life Sciences, Ad Code:___(select from above), Mail Code: BB5B, 700 Chesterfield Parkway North, Chesterfield, MO 63198. Fax: 314/737-6419.**

FOUNDATION

Regulatory Science Project Leader

We seek senior scientists with extensive experience in plant biotechnology, biochemistry or molecular biology to lead the development and implementation of science-based safety assessment strategies and the completion of scientific studies necessary to establish the food, feed and environmental safety of plant biotechnology products.

Candidates must have a Ph.D. with 4-7 years experience in a relevant field. A demonstrated record of project leadership is essential. Must work well within a multidisciplinary team and communicate effectively with diverse audiences. Knowledge of risk assessment, food safety, US and International regulations and data requirements for genetically modified plants is advantageous.

For fastest consideration for the above position, please submit your resume in scannable format to: **monsanto@aon-hros.com, ad code 99-0172 on your subject line and cover letter for expedited review. Or mail to: Monsanto-99-0172, PO Box 1262, Findlay, OH 45840.** You will receive a postcard acknowledging receipt of your resume.

Monsanto offers a competitive salary and benefits package including tuition reimbursement and 401(k). EEO/AA Employer M/F/D/V. Please note correct resume destination for each position.

Please visit our website at www.monsanto.com

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George Tate

Amy Murnane: SmithKline Beecham

Individuals seeking employment in biotechnology need sound scientific backgrounds. That's a given. When evaluating candidates with equivalent academic credentials, however, recruiters often use other factors to make hiring decisions.

"We're looking for individuals who are creative, energetic, and multidimensional so they can perform a variety of different tasks," Murnane said. "They adapt to change, and are team players who work well with other people." Hands-on research experience in a biotech lab would be a definite plus, she added.

Murnane also looks for candidates who have done their homework on SmithKline Beecham, and have made that all-important visit to the company web page. Know the company, its products, what's in the pipeline, and perhaps even a little about its competition, Murnane suggested.

"Biotechnology offers jobs that are professionally rewarding and personally fulfilling," Murnane said. "As an employer, SmithKline Beecham is a company where you can realize your potential. And overall, our goal at SB is to make people's lives healthier. That's a wonderful way to spend a career."

Tona M. Gilmer, Glaxo Wellcome—Good Career Opportunities In Many Fields Today And More In The 21st Century

Tona M. Gilmer is head of cancer biology in the research division at Glaxo Wellcome Inc., in Research Triangle Park, North Carolina. She came to Glaxo Wellcome almost 11 years ago, after receiving her Ph.D. in microbiology, postdoctorals, and five years with the federal government. We talked with Gilmer about current and future careers, the kinds of scientists in greatest demand, and related topics. Here are a few of her insights:

"Good career opportunities exist today in a broad range of fields for individuals with many kinds of degrees and training—from molecular biologists, geneticists, and statisticians to scientific writers. Many of the hot careers are in chemistry, including medicinal chemistry, analytical chemistry, and process chemistry. Demand for people in bioinformatics remains very strong. It seems to be more and more difficult to find scientists with the M.D.-Ph.D. degree combination, people capable of doing what I call 'translational' work: helping to transform the basic science discoveries into insights on human disease and ultimately products.

"Students, especially, are interested in knowing the degrees and skills that will be most in demand during the next several years. One way of assessing future demand is to look at current issues and trends in science, business, and the economy. There certainly is a lot of awareness about disease prevention and health promotion. Alternative therapies are attracting a lot of attention. Within the pharmaceutical industry, there is increasing emphasis on direct-to-consumer advertising, i.e., print and television advertising. In science itself, the genome projects are uncovering thousands of potential new drug targets, and genes, proteins, and signal transduction mechanisms. Lots of people skilled in the life sciences and informatics will be working in those fields in the next few years.

"Society itself is aging, and there will be intensive efforts to develop drugs to cope with age-related health problems. Industry's emphasis on more-rapid product development has led to wide adoption of combinatorial chemistry and high-throughput screening. These technologies are producing an unprecedented number of new drug targets. As a result, we continue to see more hiring at the other end of the drug development process, especially product development, production, and marketing. I'd encourage students whose careers will begin a few years from now to be aware of these and many other factors that could affect the 21st century job market.

"What about computer skills? Some jobs, such as bioinformatics or statistics, require a high level of computer knowledge. But many others, including bench-side research, don't

Tona M. Gilmer: Glaxo Wellcome

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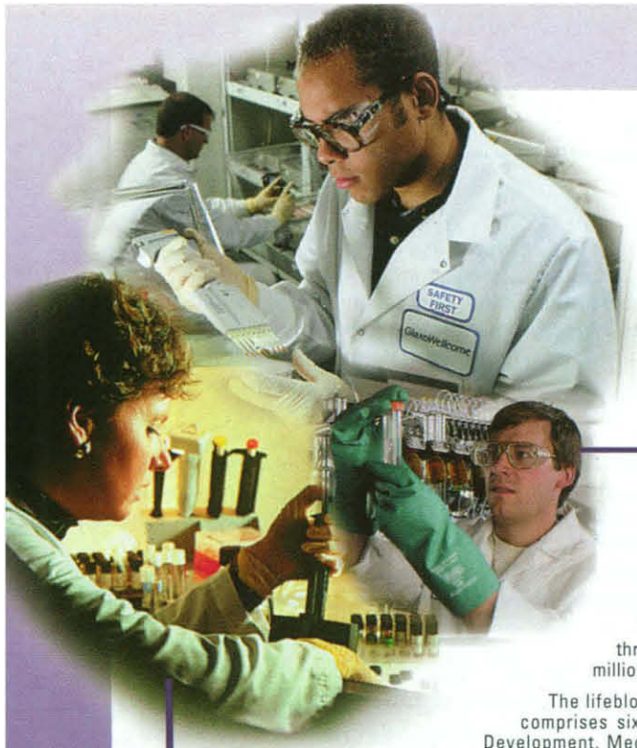

MAKING EVERYDAY LIVING A HEALTHIER EXPERIENCE

It's one goal shared by all at Glaxo Wellcome.

Different insights, unique skills, multiple perspectives — all blend together to create an environment of high achievement at **Glaxo Wellcome.** One of the world's leading pharmaceutical companies, our organization invests $2 billion annually on R&D projects. It's clearly one of the reasons why Glaxo Wellcome is responsible for so many breakthrough discoveries that have improved the lives of millions of people.

The lifeblood of our company, Research & Development, comprises six divisions within our organization: Research, Development, Medical, Regulatory & Product Strategy, Genetics, and R&D Operations. If you are an R&D professional ready to tackle some of the most exciting challenges in the world of medicine, then there is no better place to be than Glaxo Wellcome. **Now is an exciting time to join our Pharmacology Team, at our Research & Development Center located in Research Triangle Park, NC, in one of the following openings:**

CANCER BIOLOGY

- **RESEARCH INVESTIGATOR I/II -** Will establish, perform, and direct the in vivo evaluation of novel cancer therapeutics. Requires Ph.D. in a Biological Science with at least 2 years postdoctoral experience in Biochemistry or Molecular Biochemistry. **Refer to Job ID# 7196.**
- **ASSOCIATE SCIENTISTS/SCIENTISTS/RESEARCH SCIENTISTS -** Will provide in vivo support to drug discovery research programs in cancer. Requires BS/MS in a Biological Science with at least 2 years experience in small animal handling, tissue culture and electronic data handling. **Refer to Job ID#s 7005 and 7006.**

OSTEOPOROSIS/OSTEOARTHRITIS

- **RESEARCH INVESTIGATORS I/II & SR. RESEARCH INVESTIGATOR -** Will assist in searching for novel approaches to treat osteoarthritis, osteoporosis, and other musculoskeletal diseases. Requires a Ph.D. in a Biological Science with at least 2-3 years postdoctoral training experience. **Refer to Job ID#s 7199 and 7200.**
- **ASSOCIATE SCIENTISTS/SCIENTISTS -** Will assist in developing in vitro and in vivo models of bone resorption and formation and/or chondrocyte/cartilage biology and related programs that focus in the musculoskeletal disease area. Requires a BS/MS in a Biological Science with at least 2 years cell/tissue culture experience. **Refer to Job ID#s 7192 and 7193.**

URINARY INCONTINENCE

- **RESEARCH INVESTIGATOR I/SR. RESEARCH INVESTIGATOR -** Will assist in designing/developing and validating in vitro and in vivo models to discover drugs for the treatment of urinary incontinence and other urogenital disorders. Requires Ph.D. in a relevant area with at least 2 years postdoctoral experience in neuro-physiology or pharmacology. **Refer to Job ID# 7088.**

TYPE II DIABETES/BETA CELL BIOLOGY

- **RESEARCH INVESTIGATOR I/II -** Will assist in the discovery and development of anti-diabetic therapies that preserve or restore beta cell function in Type II diabetes (NIDDM) patients. Requires a Ph.D. in a Biological Science with at least 2 years relevant postdoctoral experience. **Refer to Job ID# 7201.**

We offer an excellent salary/benefits package and an outstanding professional environment as evidenced by our recognition by both **Working Mother** Magazine (**"Top Ten Best Companies for Working Mothers"**) and **Business North Carolina** Magazine (**"Best Company to work for in the state of North Carolina"**). In addition, the vast cultural, educational, and recreational advantages of the Research Triangle area provide all the ingredients for an exceptional lifestyle.

For more information and to apply online, please visit our web site at www.glaxowellcome.com Search for Job ID# (noted above) under Employment Opportunities.

If you are unable to apply online, resumes may be faxed to: (919) 315-1053. If you are unable to fax, please mail to: Job ID#____, Glaxo Wellcome Inc., HR-Sth-E2440B, P.O. Box 13398, Research Triangle Park, NC 27709. Be sure to reference the Job ID# on all faxed or mailed correspondence. (No phone calls or agency referrals, please). An Equal Opportunity Employer M/F/D/V

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Ontogeny, Inc.

Ontogeny, a leader in the field of developmental biology, is seeking highly motivated scientists to join an interactive group of researchers in a stimulating and challenging environment. Our rapidly growing company applies molecular and cellular biological techniques to studying tissue development and repair. Our current focus is to expand discovery efforts while aggressively pursuing our existing research and development projects. This has created a variety of exciting career opportunities.

In Ontogeny's on-going quest to build a company of distinction, we are continually creating a team of highly motivated, committed individuals. In acknowledgement of the expertise you bring to the company, we offer a very competitive compensation package, including an incentive stock plan, challenging projects, and an exciting positive atmosphere. If interested in joining the Ontogeny team, please respond by sending your resume to:

Marlene A. Thayer
Director, Human Resources
45 Moulton Street
Cambridge, MA 02138
Fax: 617/876-7617

No telephone calls or emails please.
Ontogeny, Inc. is an Equal Opportunity Employer.
www.ontogeny.com

Developmental Biology
Molecular Biologist/Developmental Biologists are sought to participate in a group dedicated to the discovery and characterization of novel genes/pathways important in development and disease processes. The successful candidate will have post-doctoral experience studying model organisms and a strong interest in inducing molecules and signaling pathways important in development. Prior experience working with zebrafish or Xenopus, as well as knowledge of angiogenesis and tumor formation is also preferred. ***Job Code: DB***

Scientist, High Throughput Screening/Lead Discovery
We are seeking an individual with expertise in assay development and High Throughput Screening (HTS) to accelerate the lead discovery and optimization process utilizing Ontogeny's novel biological targets and chemical libraries. This scientist will participate in team efforts to identify therapeutically relevant targets, as well as develop and carry out assays appropriate for HTS. Qualified candidates will possess a Ph.D. in Chemistry, Biochemistry, or Engineering, and have 3 years experience in a high throughput drug screening environment. A working knowledge of modern laboratory automation and information systems is essential. ***Job Code: HTS1***

Research Associate, High Throughput Screening - BS/MS Level
We have an immediate opening for a High Throughput Screening (HTS) scientist to assist in the screening of large arrays of chemical compounds. Qualified candidates will have 3-5 years experience in developing biological assays (i.e. SPA, TRF, ELISA, enzyme assays), cell culture, protein purification and analytical techniques, including HPLC. Working knowledge of modern laboratory automation systems is essential. ***Job Code: HTS2***

Computational Biologist/Bioinformatics
We are seeking a scientist to analyze sequence and gene expression data for the interpretation of function. The successful candidate will collaborate with experimental biologists in the design and implementation of sequence-based strategies for the identification of novel therapeutic proteins and signaling pathways. This position requires a Ph.D. in a biological science. Expertise with sequence databases and the computational tools used to analyze these sequences is required. Familiarity with a UNIX environment is also preferred. Programming skills for the manipulation of databases is essential. Candidates should possess excellent communication skills and the ability to work in a collaborative environment. ***Job Code: CB***

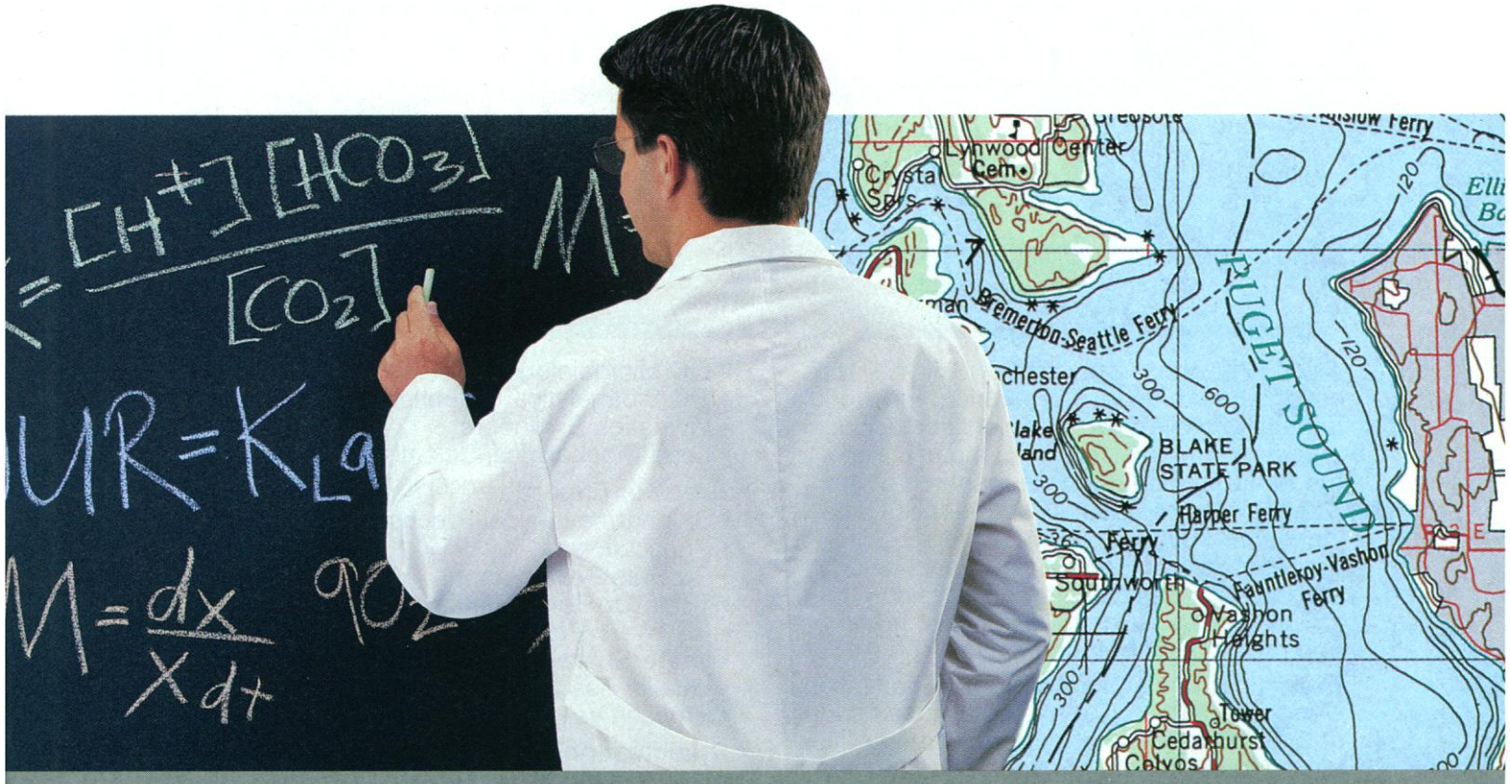
Scientist - Pharmacology
Positions are available for Ph.D. level scientists, especially those with prior pharmaceutical or biotechnology experience. The successful candidates will join a new pharmacology group and work closely with Ontogeny's molecular and cell biologists to test recombinant proteins and small molecules in various disease models. Prior experience in dermatological or neural disorders is preferred. ***Job Code: PH1***

Research Associate - Pharmacology
We are also looking for scientists with BS or MS degrees in pharmacology, toxicology or related disciplines. Prior experience with *in vivo* pharmacology is essential. ***Job Code: PH2***

Protein Expression/Purification
We are seeking individuals at the Ph.D. and BS/MS level with prior experience in protein expression and purification to work on various projects involving developmentally regulated proteins. The successful candidates will play essential roles in both discovery research and in studies involving animal disease models. ***Job Code: PE***

Project Manager
Strong background in basic science with 5 years experience in health care/biotech, including experience in project management. Proven cross-functional, interpersonal skills and project management skills; strong written and oral communication, and organizational skills. Must have a solid understanding of project planning techniques and software. Must be able to independently manage and influence multiple project activities and plans simultaneously. Knowledge of the drug development process is a plus. ***Job Code: PM***

Hematopoiesis Research Scientist
This individual will play a leading role in the study of hematopoietic cell development. The successful candidate must have a Ph.D. and a minimum of two years of post-doctoral experience in molecular or cellular biology. Working knowledge of the hematopoietic system, including assays of hematopoietic growth factors and precursor cell development in animal models and humans, is required. Familiarity with methlycellulose and bone marrow colony assays highly desirable. ***Job Code: HRS***



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As one of the largest biopharmaceutical firms in the Pacific Northwest, we offer a work place that fosters world-renowned scientific discovery. Here, you'll have all the resources, the support and the freedom you need to accomplish great things. Away from work, you'll find our Seattle location affords unlimited options for a uniquely rewarding lifestyle. It's really an unbeatable combination. Which is why our "work life" programs have won awards and received national and state-wide recognition.

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BIOPHARMACEUTICAL MANUFACTURING AND QUALITY OPERATIONS

SAIC Frederick, a division of Science Applications International Corporation, the world's largest employee-owned scientific, technical, and engineering sciences company, works at the forefront of biomedical research at the National Cancer Institute's Frederick Cancer Research & Development Center. SAIC Frederick is a contemporary biotechnology organization dedicated to the development of knowledge and tools for diagnosis, treatment and prevention of human cancer and AIDS.

Biological Drug Development: The National Cancer Institute (NCI) has established state-of-the-art biological drug production facilities for the development of experimental therapeutics for preclinical and Phase I and II clinical trials in cancer and other diseases. The Developmental Therapeutics Program (DTP) of the Division of Cancer Treatment and Diagnosis (DCTD) defines the scope of activities and compounds to be developed both for intramural and extramural investigators. Several of these are of current national importance.

The multi-use facilities employ cutting-edge technology in mammalian and microbial cell reactors for production of monoclonal antibodies and recombinant proteins. Complete class-100 clean rooms. BL-3 containment, fementation and bioreactor laboratories, biochemistry, and QC/QA operations are included.Analytical laboratories located on-sitesupport these operations.

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- Biopharmaceutical Manufacturing Specialists
- Project Scientists
- Purification Scientists
- Biopharmaceutical Supervisors
- QC Microbiologists & Technicians
- QC Bioanalytical Scientists & Associates
- Validation Engineers
- Lead Bioanalytical Scientist

Areas of Expertise:
- Biopharmaceutical Process Operations
- Purification
- Process Development
- Scale-Up Fermentation
- Recovery Process
- Large-Scale cGMP Purifications
- Quality Assurance/Quality Control
- Process Validation

Qualifications:
- PhD & MS, chemical/biochemical engineering/biochemistry & biological sciences
- cGMP certification

Our commitment to excellence in all aspects of cancer research is the foundation of our progress. If you share our commitment, explore these opportunities that will challenge your interests.

You'll work in a campus-like setting in Frederick, MD, near Baltimore and Washington, DC. Several colleges are located nearby, and with our tuition assistance program, you'll be able to continue your education. We offer a competitive salary and an excellent comprehensive benefits program.

Find out what the future holds for you at the NCI-FCRDC. Send your resume to: ***SAIC Frederick,*** Human Resources, PO Box B, Frederick, MD 21702-1201 or e-mail: hr@mail.ncifcrf.gov

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Pfizer Discovery Technology Center

Cambridge, MA

Pfizer, recently named **"Company of the Year"** by Forbes, is creating a new research facility for discovery - the **Discovery Technology Center**

• SCREENING TECHNOLOGY

Research Scientist

Work with external collaborators and Pfizer scientists to establish/implement a novel high throughput screening system. PhD in Biology or Biochemistry and 3 - 5 years of experience in HTS, plus excellent leadership and communication skills are required. **Dept. SC599-RKS**

Laboratory Engineer

Multiple responsibilities in our early drug discovery efforts, including developing new robotic systems and user interfaces. BS/MS degree in Engineering or Physical Sciences (PhD desirable) and at least 3 - 5 years of laboratory and lab automation experience are required. **Dept. SC599-RKE**

• MOLECULAR BIOLOGY

Make a key contribution to efforts aimed at leveraging genomic information for new targets, as well as developing and validating novel assays for drug screening. Positions are available for BS/MS level scientists with 2 - 5 years of experience in Molecular Biology. Familiarity with bioinformatic tools is desirable. **Dept. SC599-RKM**

• CELL BIOLOGY

Outstanding opportunity to develop whole cell assays and imaging systems for gene function studies and screening. Positions are available for both PhD and BS/MS level scientists with 2 - 5 years of post-graduate experience in Cell Biology or Molecular Biology. Experience with G-protein coupled receptors is a plus. **Dept. SC599-RKC**

• BIOINFORMATICS

Work as part of a multidisciplinary team to develop bioinformatic tools for drug discovery. Candidate should have experience in applying computer algorithms to genomics, structural biology or related applications. PhD in Bioinformatics, Computational Biology, Life Science, or Computer Science is required, as are strong analytical and communication skills. PERL, HTML, JAVA, UNIX experience is a plus. **Dept. SC599-RKB**

• SCIENTIFIC INFORMATICS

You will be part of an exciting team developing state-of-the-art scientific applications supporting a broad range of projects in the pharmaceutical and biotech arena. PhD, BS/MS in Biology, Chemistry, or Physics plus extensive experience in object oriented environments, database or JAVA/GUI development, or related IT skills are required. **Dept. SC599-JTI**

For immediate consideration, please e-mail resumes, indicating Department Code in "Subject" line, to:
openings@cambridge.pfizer.com

Or fax resumes to: **(617) 551-3111**

Pfizer Discovery Technology Center
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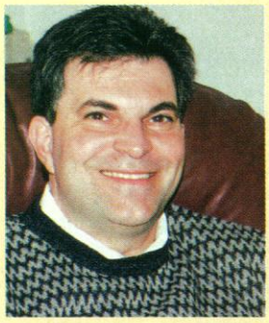
The Headhunter's Perspective

Joe Tringali, Tringali And Associates — "A Very Good Job Market Overall"

Assessing supply and demand in today's red-hot biotech job market. Keeping up to speed with trends in the economy, science, and society that influence hiring. Knowing what degrees and skills are hot today, and projecting supply and demand into the 21st century job market.

Few individuals devote more effort to these tasks than head-hunters, personnel at the hundreds of search firms that fill a sizable percentage of jobs in the biotechnology and pharmaceutical industries. Joe Tringali has been on the front lines for years — both as an on-site recruiter at biopharmaceutical firms and now as head of his own recruitment organization, Tringali and Associates in Portsmouth, New Hampshire. What's the headhunter's perspective on careers in biotech?



Joe Tringali: Tringali Associates

"With today's strong economy, the job market is very good overall and incredibly good for people with the right skills," Tringali said. "The enthusiasm to hire grows from its own energy. One company sees another staffing up, and feels a need to follow suit. It certainly intensifies demand."

Far and away the greatest demand is for people prepared to work on the interface between the life sciences and information sciences, Tringali said. That, of course, means emerging fields like bioinformatics, computational biology, and genomics research where recruiting has been intense for the last several years. "Everybody is jumping on the informatics bandwagon," he observed. "It's not just genomics companies, but the traditional drug discovery firms well. They want an in-house informatics capability, and must compete for a limited number of well-qualified applicants. Recruiting becomes a function of supply and demand."

Are biotech companies fully aware of the tight market conditions, and prepared to compete for the best candidates? Not always, says Tringali. He offered a one-sentence self-assessment for corporate recruiters and hiring managers: "Why would a candidate be interested in doing this job at this company, at this point in time? What are we, as an organization, selling to candidates? If nobody seems to know, recruiting will not be successful. Right now in a heated market, companies need to sell themselves. I'm not sure that always happens, or that there is consistency in the message."

Changes in the biotech industry itself have quietly become one of the major influences on career opportunities. With products finally reaching the end of the pipeline, companies are putting more emphasis on hiring downstream personnel who can help take products to market. "The pharmaceutical firms are still hiring bench-side scientists in droves," he explained. "But the biotech companies are placing more emphasis on the process sciences, clinical research, and business. There will be more and more job openings in product development, regulatory affairs, product licensing, marketing, and related fields."

Scientists hankering for a mid-career change take note: Tringali sees bright opportunities in the business side for individuals with life science degrees and benchside research experience. Some make the transition almost overnight, with little special preparation. Others plan the move, enhancing their education with a few business courses, an MBA, or even a law degree. "These are tremendous combinations," Tringali said. "They become very, very marketable individuals."

require any special computer skills. Today's entry-level scientist should have a good basic knowledge of word processing, spreadsheets, and other commonly used software, like Microsoft Word and Excel. Most candidates pick up these skills as undergraduates without taking computer courses. Remember that many large companies have excellent in-house programs to train new employees in the software specific to the company or research area.

"A successful career requires more than good scientific skills. It's not uncommon for a recruiter to find two candidates with comparable scientific backgrounds. If the skills are similar, we look for evidence of other characteristics during the interviews or from references. Flexibility is very important. Scientists should be open to the change that occurs as research emphases shift and new technology is introduced. In addition, I value candidates who possess the skills to apply strategic thinking. Curiosity, creativity, and the ability to work effectively on a team are essential. I really stop and take notice when an applicant has hands-on lab experience in industry. A summer internship program during college or a work-study experience in graduate school can really jump-start your career.

"Finally, a global outlook will be increasingly important for applicants. Science is an international endeavor, and this is a global industry. The United States is not the only place where researchers can do excellent science. More and more good career opportunities are opening up for scientists around the world."

Continued ➢

PIONEER HI-BRED INTERNATIONAL, INC.

...the plant genetics company.

Located near Des Moines, Iowa, Pioneer Hi-Bred's ninety-acre campus, including our recently completed laboratory expansion, offers a superb working environment. We currently have the following scientific opportunities available to suitably experienced, highly motivated individuals seeking to make an impact on the future of agriculture.

COORDINATOR - Genomics & Genetic Gain - Agronomic Traits (Job #99133B)

This person will be responsible for leading a group of scientists who are using the extensive genomic capability developed at Pioneer to understand the process of heterosis and to help predict corn hybrid performance. One of the major roles would be to manage the work of Ph.D. level scientists in the group. Other duties include helping lead the scientific efforts in the Agronomic Traits group and interacting closely with quantitative geneticists and plant breeders. The successful candidate will have had an outstanding research background in the field of plant molecular genetics. Applicants should have demonstrated leadership in implementing genetic and/or genomic approaches to problems in plant molecular biology. In particular, experience in the use of genomic tools such as expression arrays to analyze biological problems would be very useful. The successful candidate will have demonstrated ability to lead a research program, to set and achieve research goals, to develop and implement innovative new procedures in areas of basic and applied research, excellent communication skills, as well as fluency with use of computers and genomic analyses.

POST-DOCTORAL RESEARCH SCIENTIST (Job #98295B)

Functional Genomics — Development — Tissue-specific gene expression in plants. The in situ gene expression group is seeking a highly motivated post-doctoral scientist for the analysis of gene expression patterns by in situ hybridization and related molecular biology techniques. The project represents an approach to move from pure genomics to comprehensive functional genomics. The objective of the research is to select groups of genes from the large Pioneer maize EST database and to characterize their developmental, temporal and spatial expression patterns to reveal their possible functions. Access to high-throughput gene expression technologies, such as chip and differential display technologies will be used to select candidate genes. The goal of the project is to establish an in situ gene expression database that facilitates the identification of genes with developmental regulation, agronomically important functions and the isolation of novel tissue-specific promoters. Required qualifications include strong experience in molecular biology, in situ hybridization, histology techniques and gene expression analysis. Proficiency with sequence databases and functional genomics strategies, excellent communication and organization skills are essential. Educational requirements include a Ph.D. in Biology or related discipline with a strong background in plant molecular biology and genetics. We are proud to offer an exciting and innovative research environment, an outstanding work environment supported by extraordinary resources, and an excellent compensation package.

RESEARCH SCIENTIST - Agronomic Traits (Job #99132B)

This individual will be responsible for conducting original research in to the molecular basis of the effects of abiotic stress upon carbon metabolism in corn as part of a collaborative team effort directed towards the improvement of hybrid performance. Applicants should have strong research experience in plant molecular biology and biochemistry at the graduate and post-graduate level with competency in applying molecular genetic strategies to the analyses of metabolic pathways and their regulation. Other areas of experience considered particularly relevant to this position would include a knowledge and/or experience in abiotic stress and plant metabolism, functional genomics, and the generation and analyses of transgenics. The successful candidate will have had experience supervising technical staff and setting research goals/timelines, a demonstrated ability to develop and implement innovative new procedures in areas of basic and applied research, excellent communication skills, as well as fluency with use of computers and genomic analyses.

RESEARCH MANAGER - Seed Carbon Partitioning (Job # 99138B)

We seek an innovative scientist to develop a research program to optimize the composition of grain. It is expected that this research program will focus on methods to manipulate photoassimilate partitioning. The ideal candidate will have an excellent understanding of biochemistry and plant metabolism. Requirements include a working knowledge in molecular biology and experience in computer applications. The successful candidate will be expected to develop this research as part of a multidisciplinary team to improve grain for use as feed. Applicants must have a Ph.D. with several years of relevant experience and have excellent communication skills.

Pioneer Hi-Bred Int'l, Inc., is the world leader in the discovery, development and delivery of elite crop genetics.

We are committed to developing and incorporating both time-tested approaches and cutting edge technologies that will continue to make our products superior to any in the industry. Pioneer's research programs, research collaborations, extensive germplasm base and advanced work in genomics are unmatched by our competitors.

Pioneer employs more than 400 scientists, in an environment where individual achievements and team accomplishments come together to provide a rich and rewarding work experience. We strive to give each scientist the opportunity to make a difference...to be inventive and resourceful...to make a significant contribution.

Pioneer Hi-Bred is committed to competitive compensation and excellent annual reward systems plus a comprehensive benefits package including 401(k), tuition reimbursement and relocation assistance. Des Moines is a prospering, growing city with diverse cultural, economic, industrial and consumer resources. It ranks well above the national average in quality of life including affordability and education (**www.smartcareermove.com**).

For confidential consideration, e-mail your resume and a cover letter, indicating job code to: **(jobsresearch@phibred.com)**

or send to:
Human Resources,
Pioneer Hi-Bred International, Inc.
Research & Product Development
7300 N.W. 62nd Ave.
PO Box 1004
Johnston, Iowa 50131-1004

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PIONEER

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With over 100 years of history and results, few healthcare companies can offer you the worldwide resources, commitment and flexibility of Hoffmann-La Roche. In our never-ending quest to develop and launch innovative, cost-effective products, we exercise passion, professionalism and an uncompromising pursuit of discovery.

Hoffmann-La Roche, a leading research-intensive pharmaceutical company, is active in more than 100 countries, employs approximately 70,000 people and invests more than $1.7 billion a year worldwide in pharmaceutical research and development. This investment has produced a wide array of established products and a healthy line of new products positioning Roche to lead the industry into the 21st century. Information Management and Information Technology have become an integral component of our discovery process. We recognize that our ability to develop innovative, new therapies is contingent on continued investment in our Information Professionals, and the technology we employ. Currently, we have a number of professionally and personally rewarding opportunities available in both Discovery and Information Technology at our Nutley, NJ Pharmaceutical Research Center.

DISCOVERY

Senior Scientist - Preclinical R&D Information Technology

As a member of our Genomic and Biochip Group, you will establish and run a high-throughput "single-target expression profile" (STEP) system for early target validation using real time PCR technology and liquid handling robots. You will also create the reagents (cDNA libraries) to run STEP, and set up and run the Tissue Bank. To qualify, you will need a BS/MS in Biological Sciences along with 3-5 years background in molecular biology. Strong planning, organizational and project implementation skills are essential; the ability to work well both independently and as part of a team is a must. **Job Code 99-1101**

Computational/Chemoinformatics Scientist

Working with a team of highly motivated computational and combinatorial chemists, you will be engaged in database mining, physical chemical property analysis and diversity evaluation of small molecule compound libraries for lead discovery and optimization. You will also be actively involved in the development and evaluation of computational methodology for design and optimization of drug candidates. To succeed, you will need a Ph.D. in Chemistry or Biophysics with extensive knowledge of chemical database management and data analysis; and extensive experience with software programs for diversity analysis and compound library design. Experience in molecular modeling and knowledge of molecular recognition/structure based drug design is preferred. **Job Code 99-1117**

Principal Scientist - Discovery Technologies

As a member of the Discovery Drug Metabolism and Pharmacokinetic Group, part of our newly formed Discovery Pharmacology Department, you'll be accountable for conceiving, designing and implementing pharmacokinetic studies in animal models in support of small molecule lead optimization. You may also develop analytical methods using HPLC-MS and establish in vitro models for metabolic and pharmacokinetic profiles. To succeed, you'll need a Ph.D. in Pharmacokinetics, Biochemistry or Pharmacology; 2-5 years pharmaceutical industry experience; excellent communication and teamwork skills; and computer literacy with standard business and PK applications. Experience with animal models, PK/PD data analysis and in vitro and analytical methods desired, as is experience developing and using high throughput assays or automation of plasma sampling. **Job Code: 99-1106**

INFORMATION TECHNOLOGY

IT Lead Analyst - Application Administration and Development

You will oversee the operation and availability of a suite of client/server-based applications built with technologies including Oracle, Java, Java Script, Web, C++, Visual Basic and Power Builder. Your user group will consist of approximately 250 Scientists and you will work with a highly focussed group of informatics professionals to maintain current systems and to deliver new, state of the art applications and technology. You must be comfortable working with a variety of technical platforms including NT-Server, SGI IRIX and VAX VMS and have exceptional troubleshooting skills. Position requires a BS/MS (or equivalent) in Computer Science, Chemistry or Biological Sciences; 5 years application development and support; and prior Oracle experience. **Job Code: 99-1091**

IT Senior Analyst - System Administration and Development

Working with the Application Administrator, you will be responsible for the operation and availability of our server-based hardware platforms, hosting a suite of client/server-based applications. Your user group will consist of approximately 250 scientists and you will work to maintain current hardware platforms, retire legacy systems and introduce new state of the art technology platforms based on NT-server and SGI-IRIX. You must be comfortable working with a variety of technical platforms including NT-Server, SGI IRIX and VAX VMS and be adept at learning the latest skills necessary to keep pace with the informatics demands of our discovery processes. Position requires a BS/MS (or equivalent) in Computer Science, Chemistry or Biological Sciences; up to 5 years experience applying methodical approach to system administration; and prior Oracle experience. **Job Code: 99-1092**

IT Lead Analyst - Data Architecture and Development

Working to advance the strategic direction that we will follow for the development and deployment of our project databases will be your primary responsibility. You will also work with local and global focus groups to deploy Web-enabled global databases and information systems across our company intranet in a manner which is open and standards-compliant. This position requires superior communication and strong leadership skills combined with the ability to manage time and meet critical deadlines. A solid background with Oracle and Web technologies, developed though 5 years of experience architecting Oracle-based database solutions, and a BS/MS (or equivalent) in Computer Science, Chemistry or Biological Sciences is mandatory. **Job Code: 99-0416**

IT Senior Analyst - Scientific Data Management

Informatics is your passion and Science is your professional or academic background. Working as a key member of the Informatics group, your focus will be the data-management requirements of Roche's High Throughput Screening (HTS) group. You will work to understand the informatics requirements of HTS scientists and to maintain and develop their necessary informatics resources accordingly. You'll need 2 years of experience with Oracle, Visual Basic, Active Server Page development and Activity Base; a high degree of comfort working within a rapidly evolving scientific environment; and a BS/MS (or equivalent) in Computer Science, Chemistry or Biological Sciences, as well as Pharmaceutical industry experience. **Job Code: 99-1094**

As one of *NJ Monthly* magazine's "Best Companies to Work for in New Jersey," we offer our employees competitive salaries and a benefits package that includes on-site childcare and state-of-the-art fitness centers. To be considered for these positions, please forward your resume, *indicating salary requirement and job code of position of interest,* to: Hoffmann-La Roche, R&D Human Resources, Building 76/5th Floor, 340 Kingsland Street, Nutley, NJ 07110. Hoffmann-La Roche is an equal opportunity employer fully committed to diversity in the workplace.

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With the right people putting the pieces together, the opportunities are unlimited.

Envision an exciting future that brings new understandings in science, technology innovations and drug discoveries to meet the medical needs of our world. The people at Axys Pharmaceuticals are putting pieces of that future together every day.

Axys Pharmaceuticals is a leader in the integration of life science technologies with a focus on transforming gene discoveries into drugs. We are applying sophisticated technologies to achieve a simple goal: to provide innovative therapeutics to meet important medical needs of the world community.

Chemistry

Scientists & Research Associates

Synthetic Organic/Combinatorial Chemistry

We have immediate openings for Scientists with a Ph.D. and 1-3 years' postdoctoral/industrial experience and Research Assistants/Associates with BS/MS training and 1-5 years' industrial experience. Preferably, you have experience in synthetic organic, combinatorial or medicinal chemistry, and will carry out design and laboratory-scale syntheses of organic compounds and combinatorial libraries for evaluation as part of continuing medicinal chemistry programs. Experience in multistep organic chemical transformations on gram scale is absolutely necessary. Use of NMR, IR, MS, HPLC and routine compound isolation and characterization methodology is required. (Job# N98-ACH-SCI)

Scientist & Research Associates

Medicinal Chemistry

In these pivotal roles, you will carry out the design and multi-step synthesis of small molecule drug candidates to inhibit crysteine protease targets for inflammation; synthesize/characterize novel compounds for biological assays; perform purification/characterization of intermediates & products; and identify/verify organic materials. The Scientist position requires a Ph.D. in chemistry or equivalent, along with several years of experience in the design & execution of small molecule synthesis. The RA positions require a BS/MS in medicinal/organic chemistry, and 2-4 years (BS) or 0-4 years (MS) of hands-on experience in NMR, HPLC, MS, and multi-step synthetic organic chemical reactions. (Job# N99-017-SCI)

Medical and Regulatory Affairs

Quality Assurance Manager

As our QA Manager, you will manage the development, implementation and maintenance of the Quality Assurance Systems for our Pharmaceutical Operations. Specifically, you will lead in the execution of all activities necessary to develop, establish and maintain a QA System, ensuring compliance with current pharmaceutical industry standards. You will be responsible for the initial qualification of contractors and continued communications to ensure compliance. In this position, you will also coordinate inspections of Axys by regulatory agencies and participate in regulatory agency inspections of our contractors. To be successful in this position, your combined education and experience will be, at minimum, a Bachelor's degree in chemistry, biochemistry, or pharmacy combined with five years in a biotech/pharmaceutical QA/QC management role. Knowledge of cGMP and GLP regulations is essential. Ideally, you are someone who can define complex issues and processes, collect and organize relevant data, establish facts and draw valid conclusions while working with data management/computerized systems. (Job# N99-013-SCI)

Information Systems

Director of Information Systems

Your responsibility encompasses the full range of IS activity which includes systems development, networking, telecom, library and strategic planning. As a member of the senior management team, you will draw upon your technical expertise to shape the future direction of the IS group and to keep Axys technologically competitive and capable of supporting our scientific and strategic goals. As our top candidate, you will have an advanced technology or business degree combined with a minimum of ten years experience in information systems management (with five years in a senior management role), preferably in a scientific or research-oriented environment. A familiarity with web-based technologies and intranets as they relate to research-oriented applications, systems and databases is ideal. (Job# N99-006-SCI)

Oracle Database Administrator

You will manage Oracle databases in a Solaris/Unix environment. Your IS skills will be applied in the development, production and support for finance applications, and performance tuning of client server applications. You will also supervise the security of the systems, including maintenance of user access. We need a DBA who can define, implement and maintain a backup schedule that will ensure the ability of our business to restore mission critical information. Requires several years' Oracle DBA experience (7.3.x), including PL SQL, SQL Plus, SQL Net, SQL Loader and Data Modeling. Unix/Solaris experience is needed. (Job# N99-015-SCI)

UNIX System Administrator

You will be responsible for server maintenance, workstation hardware setup & installation, software installation & support, and system configurations & operating systems modification. The position requires 3-5 years' experience with SGI, Sun Solaris, Sun Sparc workstations, NIS, networking, and security. Effective communication skills and the ability to work with diverse user groups are essential. (Job# N98-146-SCI)

System Administrator

You will service end user requests; maintain, file, print, and backup servers; help with telecom changes & IS projects. The position requires a BSCS or equivalent; demonstrated skill in Win 95/NT & Macintosh system administration; proficiency with MS Office & Netscape suite; experience with NT File service, DHCP, WINS, Appleshare, Arcserve, Retrospect, etc. (UNIX a plus); the ability to work with end users at all levels; and excellent communication skills. (Job# N99-012-SCI)

We reward our employees with extremely competitive compensation and benefits, and the opportunity to advance your career with a growing, progressive company. Current positions are always posted on our website. Resumes/cvs may be mailed to:

Axys Pharmaceuticals, HR Dept., (Attn: Job#), 180 Kimball Way, South San Francisco, CA 94080 or emailed to human_resources@axyspharm.com. We look forward to hearing from you. EOE

AXYS

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New biological discoveries are redefining the view of the cell. Some now compare its framework to a highly organized city with a transportation system of highways and motor cars. In cells, cytoskeletal highways are protein structures and the cars that move along them are unique enzymes. Cytokinetics is harnessing the untapped potential of the cytoskeleton, crucial to many aspects of cell function, for both drug discovery and cellular bioinformatics.

A new hybrid biotechnology and informatics company, Cytokinetics is working toward the discovery of an entirely novel class of therapeutic compounds, as well as developing a powerful suite of cellular technologies designed to address current bottlenecks in pharmaceutical discovery and development. We are pursuing multiple therapeutic programs in the fight against cancer, cardiovascular, inflammatory and infectious diseases. In cellular bioinformatics, Cytokinetics is developing Cytometrix™, a series of databases using high-resolution imaging tools, advanced automated instrumentation, and sophisticated informatics that will assess and predict many aspects of cellular behavior. We are capitalizing on an exciting frontier in cell biology and are seeking individuals to contribute to our pioneering research in drug discovery and technology development.

RESEARCH ASSOCIATES

The following positions require a BS degree and industry or academic experience as noted.

Molecular Biology

Working with our Genomics group, you will clone genes, coding for novel cytoskeletal proteins based on expression profiles in normal vs. diseased tissues. Requires 2-3 years experience, including RNA handling, extraction of nucleic acid from human tissues, PCR, primer design, differential display, subcloning and automated sequencing. Ref. #GN99-01

Biochemistry

Develop purification methods for novel cytoskeletal proteins, assess their activity, and devise scale-up procedures. Two plus years relevant experience and proven expertise in protein expression and purification, including bacterial expression systems and purification from natural sources, are required. Experience with enzyme kinetics assays is a plus. Ref. #BC99-01

A second Biochemistry position will focus on purification methods for sarcomeric muscle proteins, assessing their activity and devising scale-up procedures. Expertise in the biochemistry of muscle proteins is required, including expression systems and purification from natural sources. Experience should include chromatography, enzyme kinetics, and basic molecular biology skills. Ref. #BC99-02

Cellular Technologies

The first position will develop and apply cell-based assays in the discovery of novel therapeutics. Responsibilities will include research on target biology and assessment of drug activity in cells. Basic molecular biology and biochemistry skills and expertise in cell culture and fluorescent microscopy, including observation of sub-cellular structures, must support your 3-6 years of relevant experience. Ref. #CT99-01

The second position will involve assessing cellular activity and specificity of candidate drugs, particularly in the development of oncology products. Cell culture experience is a must, and particular expertise in assessing cytostatic and cytotoxic activities of chemotherapeutics is desired. Familiarity with Microsoft Excel and fluorescent microscopy is also needed. Basic molecular biology skills are a plus. Ref. #CT99-02

Assay Development

As a member of the Assay Development and Screening group, you will develop and implement novel high throughput screening assays and new technologies for drug discovery. You must have 2-3 years biochemistry and assay design experience. A background working with enzyme kinetics, fluorescent-based techniques (such as FP, FRET, time-resolved) and/or binding assays is desired. Ref. #AD99-01

SCIENTISTS

Genomics Anti-Fungal Program

Identify new cytoskeletal targets for drug discovery in our anti-fungal program. This will involve designing and executing genetic screens, as well as expressing targets for biochemical high throughput screening. Requires experience with genetic screens and yeast molecular genetics. A strong background in yeast cell biology is essential. Experience with pathogenic fungi is a plus. Ref. #GN99-02

Chemistry

You will be responsible for optimizing new drug candidates as well as synthesizing screening compounds for drug discovery and protein labeling reagents. Your PhD in Organic Chemistry or equivalent field must be supported by 3+ years experience. A solid background in medicinal chemistry, combinatorial chemistry, and pharmaceutical optimization is desired. Experience in analytical chemistry and/or 3D modeling is a plus. Ref. #CH99-01

BIOINFORMATICS

We are seeking IT and bioinformatics professionals to work with molecular biologists, cell biologists and computational engineers in developing cellular bioinformatics tools for drug discovery.

Bioinformatics Scientist

Design and implement both procedures for curation of public and proprietary sequence databases as well as methods for storing, querying and interpreting data. An MS/PhD/equivalent, 3+ years experience in an academic, healthcare, or biotech setting, and a strong understanding of sequence analysis are required. Working knowledge of bioinformatics tools (such as GCG), Perl, C++, Oracle, data modeling and database design is also needed. Ref. #BI99-01

Biostatistician/Data Analysis Specialist

Success in this position depends upon your familiarity with statistical and neural networks-based algorithms for classification and predictive data analysis, and image analysis/pattern recognition algorithms. Requires an MS/PhD in Statistics, Biostatistics or CS, 2+ years working in an academic or industry setting, and working knowledge in one or more of the following: Matlab, S-Plus, C++, Oracle, data modeling, and database design. Ref. #BI99-02

Database Specialist

Utilize your considerable database design and implementation experience to set up Web-enabled applications. This will require a solid understanding of data integration challenges, as well as an MS/PhD in CS or a related field, 3+ years academic or industry experience, and a basic understanding of bioinformatics. Oracle, PL/SQL, Perl, C++, JAVA, MS Access, and development experience in Windows NT and UNIX environments will also be necessary. Ref. #BI99-03

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Founded in 1998 by distinguished scientists and academic leaders, Cytokinetics has won the backing of our industry's most prestigious investors. We are building a team of talented scientists and bioinformatics professionals to do great science in a great environment. Qualified candidates are invited to submit a resume, specifying position title and Ref. #, to Cytokinetics, Inc., Professional Staffing, 280 East Grand Ave., Suite 2, So. San Francisco, CA 94080. Email to hr@cytokinetics.com. EOE.

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Focus on Combinatorial Chemistry by Peter Gwynne

By reacting a set of starting chemicals in every possible combination, combinatorial chemistry gives life scientists the ability to create molecules in huge numbers, and to test them for sought-after properties. Those abilities have attracted the attention of pharmaceutical companies. In recent years, virtually every large drug company has set up a combinatorial chemistry group.

Rick Harris and Tom Sowin: Abbott Laboratories

"We're looking to expand the technology," says Thomas Sowin, project leader for combinatorial chemistry at Abbott Laboratories in Abbott Park, Illinois. "We may add one or two people this year. Our goal is to expand the technology more routinely into outside areas for medicinal chemists."

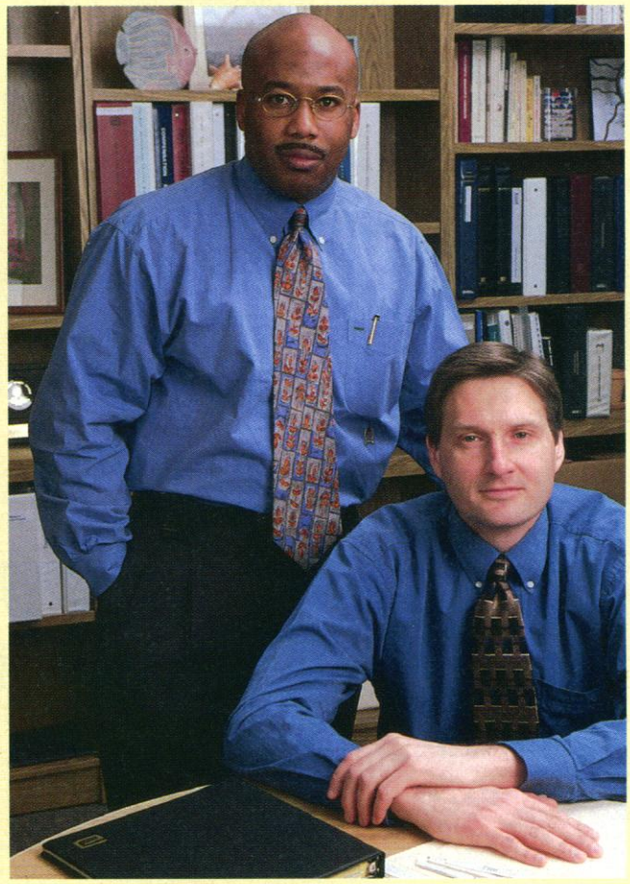
Abbott decided to expand its small combinatorial chemistry operation four years ago, after analyzing the activities of its pharmaceutical competitors and biotechnology firms. The company selected Sowin, who had previously specialized in process chemistry, to lead the group. "I always think of combinatorial chemistry as a hybrid between medicinal chemistry and process chemistry," he asserts.

The group has notched up several successes. "We've developed some new tagging techniques for combinatorial mix-and-split libraries that permit us to enumerate the number of hits on single beads," explains Sowin. "We have worked with our engineers to come up with an automated liquid-liquid extraction work station. We have one compound that has entered clinical trials in the cancer area that was directly influenced by combinatorial chemistry. It was a serendipitous discovery in which we found a new hydrophobic pocket unknown to medicinal chemists. In addition, we have optimized several other compounds to subnanomolar potencies."

When he recruits new members for his group, Sowin recognizes that combinatorial chemists are rare commodities indeed. "So what I look for is, first of all, good skill in synthetic organic chemistry," he says. "Beyond that, recruits have to have an interest in doing combinatorial chemistry, and maybe an aptitude for using automation. We look for people who have established records in bringing projects to successful completion, and have demonstrated creative problem-solving skills in organic synthesis."

Abbott Labs looks for capabilities beyond the laboratory. "Today's chemists must have strong communication skills, both oral and written," says Rick Harris, staffing manager for Abbott Laboratories' pharmaceutical products division. "Because of the number of cross-functional teams that exist in our organization, a scientist must understand the complete business objectives, from the discovery of a compound to the marketing and sale of the final product."

Finding such scientists isn't easy. "With the U.S. unemployment rate at 4.3 percent, the acquisition of scientific talent remains a challenge," says Harris. Nevertheless, he adds, "Abbott Laboratories remains a company of choice among top scientists, primarily due to the nature of our business, our financial performance, our stability, and, most important, the people we employ."

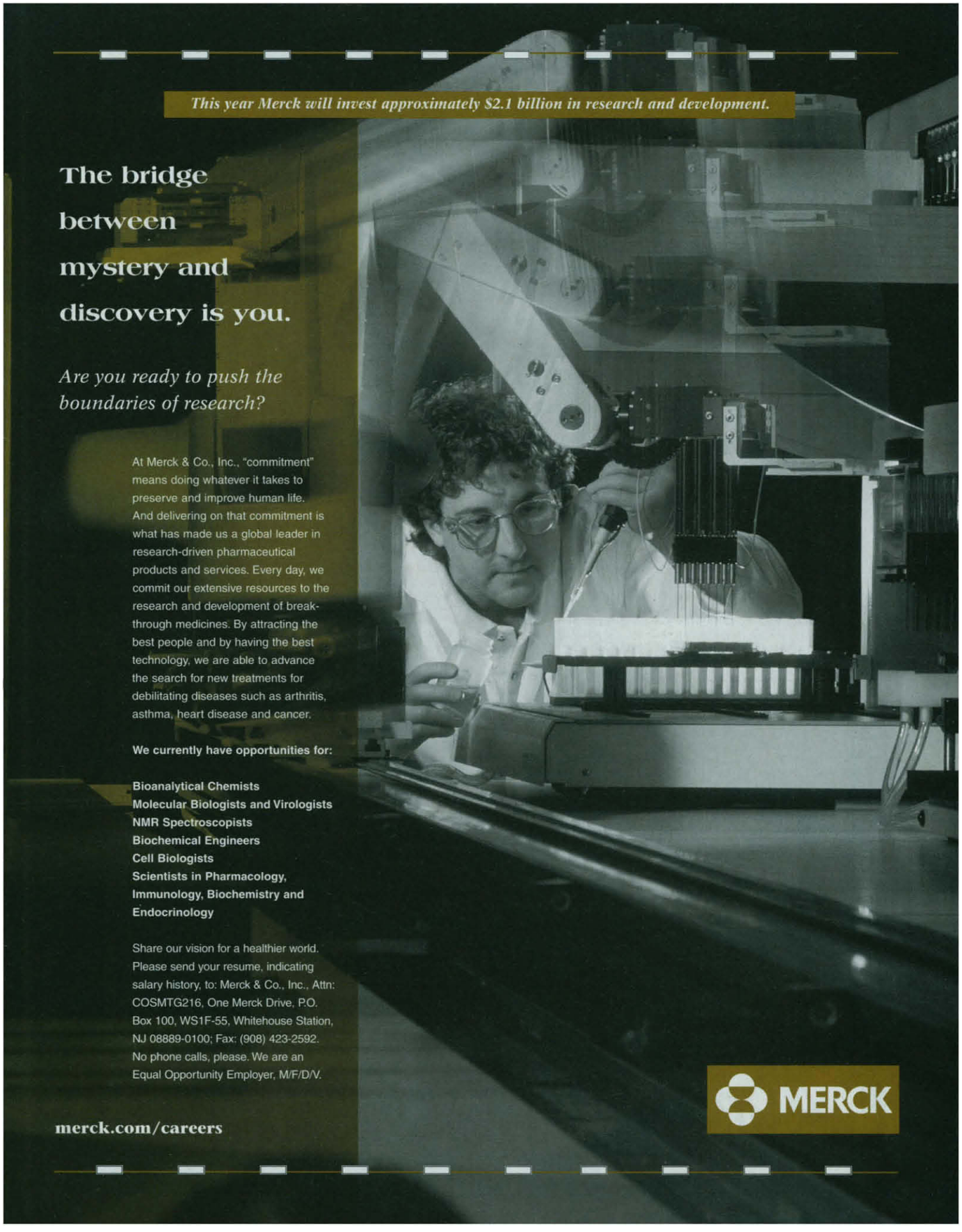


Rick Harris, left, and Tom Sowin: Abbott Laboratories

Sowin generally recruits individuals fresh from completing Ph.D's or postdoctoral fellowships. However, the group encourages applications from individuals with some industry experience. Those scientists "must have strong supervisory and managerial skills, and be able to work with and motivate employees with very diverse backgrounds and experiences," says Harris.

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

Continued ➢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Aurora provides integrated biology and instrumentation solutions to the pharmaceutical industry. Our collaborators include: Bristol-Myers Squibb, Eli Lilly, Merck & Co., and Warner-Lambert. We specialize in assay miniaturization and ultra-high throughput screening based on novel fluorescent assay technologies and instrumentation. We have the following opportunities available:

Ion Channel Biology

Our integrated platform of bioassay technologies and automated screening systems for drug discovery includes our unique proprietary set of fluorescent indicators, specialized high-speed microplate readers and engineered cell systems for eliciting and detecting the activity of ion channels in living cells. We are currently expanding our efforts on ion channel technologies and are seeking creative, energetic individuals at both the scientific and management levels to develop and execute our programs.

SENIOR SCIENTIST/PRINCIPAL SCIENTIST

This position requires an expert in ion channel physiology and biophysics. The successful candidate will develop creative solutions for detecting channel expression and function by leveraging our existing technologies such as FRET-based voltage sensors, GFPs and B-lactamase reporter genes. Applicants should have a Ph.D., 3+ years postdoctoral experience and an extensive background in electrophysiological techniques, with a clear emphasis on mammalian cell patch-clamping as evidenced by a good publication record. Excellent communication skills are essential. Industrial experience preferred.

GROUP LEADER/ASSOCIATE DIRECTOR

This challenging position calls for a "hands-on" scientific leader/project manager to provide expertise in mammalian cell electrophysiology while guiding complex programs regarding ion channel technology development and drug discovery. The successful applicant will assist in the definition of new strategic directions and opportunities afforded to the ion channel field by Aurora's unique combination of chemistry, biology and instrumentation. Requirements include a Ph.D., 7+ years post-doctoral experience (including 3+ years experience in pharmaceutical or biotech industry), a strong technical background in ion channel biophysics and a broad understanding of the roles of ion channels in human disease. Excellent communication and management skills are essential; a track record of drug discovery for ion channels is preferred.

Genomics

SR. SCIENTIST

The successful candidate will be involved in a project aimed at the identification of differentially expressed genes in human cell lines using novel technologies (Zlokarnik, G. et al.: Science 279, 84-8(1998); Whitney, M. et al.: Nature Biotechnology 16(1998). The work will involve engineering human cell lines, cDNA cloning and analysis of expression profiles using bioinformatics tools. A state-of-the-art DNA sequencing facility is available to support this project. Candidate should have a Ph.D. in Molecular Biology with a minimum of 3 years post-doctoral experience. Must be proficient in molecular biology and able to manage a project related to large-scale identification of genes, i.e. molecular cloning and sequencing. Knowledge of bioinformatics is essential. Experience in mammalian cell culture is preferable, as is the desire to interact with other ongoing projects within and across departments.

Instrumentation & Manufacturing

QC TEST MANAGER

This high visibility position carries responsibility for the QC testing of high tech equipment, including our Ultra-High Throughput Screening Systems. The successful applicant will manage a small group in scheduling and performing QC testing data. develop test procedures, ensure the technical rigor of QC testing and maintain the accuracy, calibration and traceability of equipment and materials used. Requires a BS in Bioengineering, Biophysics, or Biochemistry (or equivalent) and 7+ years of hands-on experience as a QC Engineer involved in QC testing of high tech lab/production equipment in the biotech, pharmaceutical or biomedical industries. ASQC certification desired.

TECHNICAL SERVICE SPECIALIST

The successful applicant will be responsible for the technical and biological applications support of Aurora-installed instruments with an emphasis on troubleshooting automated bio-assays; for providing applications training to customers and working closely with company screening and assay development departments. Requirements include a BS in Biology (Molecular or Cellular preferred) or related life-science, 1+ years' experience with drug discovery/screening in an automation lab environment and 2+ years' in field applications/customer support of lab automation. Must have experience in developing, configuring and conducting cell-based assays; the ability to prepare/lead application training courses; knowledge of Windows NT and the ability to travel overnight on short notice, including international travel. Familiarity with liquid-handling robotics preferred.

Legal

ASSOCIATE COUNSEL

This is an excellent position for a self-motivated professional with substantial experience with clients and legal matters related to high technology (including software, electronics and manufacturing). Requires 3+ years of experience in general agreement drafting and negotiating, licensing, and patent counseling; strong academic credentials; excellent written/verbal skills; a flexible demeanor; high integrity; a strong work ethic and the ability to excel as a team player. Applicants must be a member of the California bar in good standing and preferably registered to practice before the U.S. Patent and Trademark office. 1-2 years of patent prosecution/ intellectual property counseling experience with a well regarded intellectual property practice in California and a BS in Computer Science, Electrical Engineering or Mechanical Engineering preferred.

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Roche Global Research has created an exciting environment where innovative people from around the world come together to apply world class science and powerful new technologies. Above all, we create new medicines and shape future therapies through outstanding people and science.

At our six research sites, we seek ambitious people to further enhance our core competencies in Medicinal Chemistry, Synthetic Chemistry, Parallel/Combinatorial Chemistry, Computational Chemistry and Process Development. Opportunities are presently available in:

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- **Palo Alto, California**
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People at Roche enjoy an enriching performance-based culture that sets ambitious goals and rewards achievement. We view global teamwork as a competitive advantage and provide an environment that fosters passionate exploration and professional empowerment. Please refer to the addresses noted above to learn more about available opportunities and reference Job Code RGR0507 in any correspondence submitted. As a global organization, we value diversity and are proud to be an equal opportunity employer.

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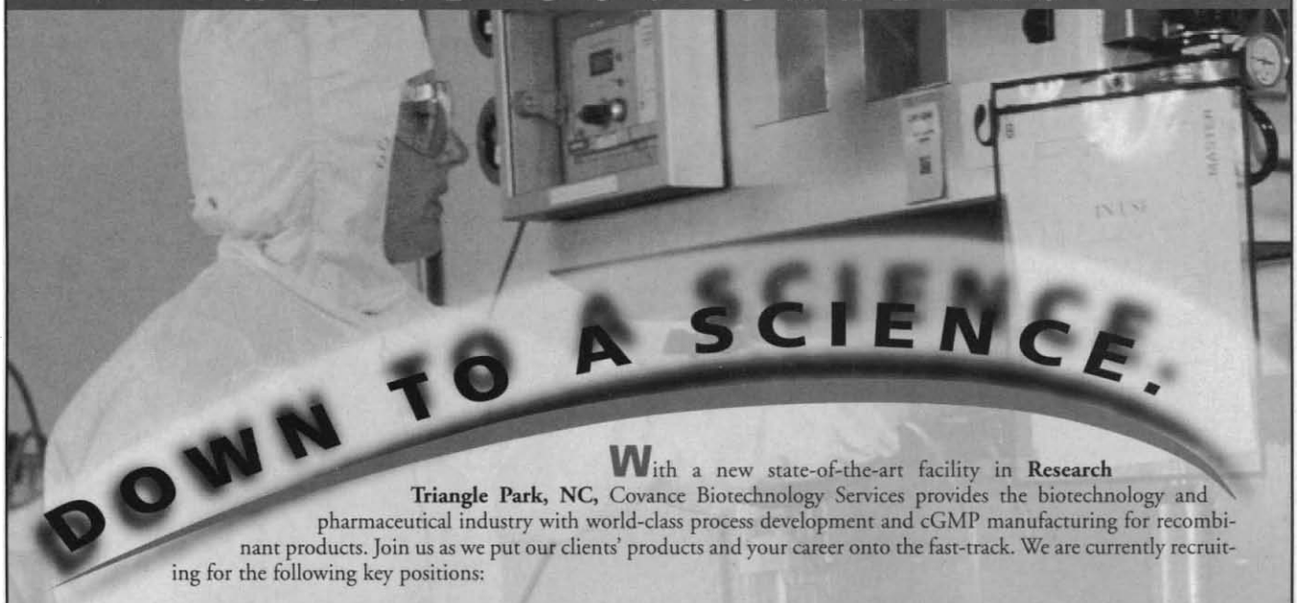

DOWN TO A SCIENCE.

With a new state-of-the-art facility in **Research Triangle Park, NC,** Covance Biotechnology Services provides the biotechnology and pharmaceutical industry with world-class process development and cGMP manufacturing for recombinant products. Join us as we put our clients' products and your career onto the fast-track. We are currently recruiting for the following key positions:

■ SCIENTIST I/II, FERMENTATION/CELL CULTURE DEVELOPMENT
In this position, you will be responsible for the development of cell culture processes (mammalian, hybridoma and insect cell) for the manufacture of biopharmaceuticals. A Ph.D. (or equivalent experience) in Cell Biology, Microbiology, or Biochemical Engineering and 5+ years of experience is required. Knowledge of relevant analytical techniques and a good understanding of cell biology and cell line development are also essential. **(Job Code S-063)**

■ SCIENTIST, PURIFICATION DEVELOPMENT (2 OPENINGS)
In this position, you will be responsible for the development of processes for the manufacturing of biopharmaceuticals and the transfer of these processes to Covance cGMP manufacturing facility. A Ph.D. (or equivalent experience) in Biochemistry or Protein Chemistry is required. 5+ years of experience in protein purification and protein chemistry is also required along with knowledge in the areas of chromatographic methods, centrifugation, and ultrafiltration techniques. Relevant cGMP experience will be considered a significant plus. **(Job Code S-059)**

■ SCIENTIST FORMULATION DEVELOPMENT
In this position, you will be responsible for the development of formulations and formulation processes for protein therapeutics. Should be knowledgeable in the field of biophysical chemistry and in techniques to achieve protein formulations with long term stability. Should have experience in developing formulations for lyophilization as well as lyophilization cycle development. Analytical experience should include methods for quantitation of protein degradation and characterization of degradation products. A Ph.D. (or equivalent experience) in Biochemistry or Protein Chemistry and 5+ years of relevant experience is required. Relevant cGMP experience will be considered a significant plus. **(Job Code S-054)**

■ STABILITY MANAGER
In this position, you will be responsible for performing cGMP stability studies for protein therapeutics. Analytical experience should include performing HPLC, gel electrophoresis, protein concentration, peptide mapping, and other stability indicating assays for liquid and lyophilized formulations. Will also be involved in data analysis using appropriate computer software. A BS with 4+ years of experience or MS with 2+ years of experience is preferred. Experience in working in a cGMP setting is also preferred. **(Job Code S-046)**

■ PROCESS SPECIALIST/ENGINEER
In this position, you will be responsible for technology transfer, writing of batch records and process flow diagrams, process engineering to support manufacturing, and trending or production data and troubleshooting. An MS or equivalent in Chemical Engineering, Biochemical Engineering, Biotechnology or Biochemistry along with 2+ years of experience or a BS in Chemical Engineering, Biochemical Engineering, Biotechnology or Biochemistry with 5+ years of experience is preferred. **(Job Code S-047)**

■ RESEARCH ASSOCIATES (OPENINGS IN FERMENTATION/CELL CULTURE, PURIFICATION, ANALYTICAL DEVELOPMENT, FORMULATION, STABILITY)
In these positions, you will be responsible for assisting in the development of fermentation/cell culture, purification development processes, and analytical methods for the production of biopharmaceutical products. A BS/BA (or equivalent) in a scientific area and 1+ years of related experience is preferred.

■ PROCESS VALIDATION SPECIALIST (2 OPENINGS)
In this position, you will be responsible for managing, writing, and executing process validation protocols. In addition, the validation specialist will assist in writing validation master plans, assists in maintaining the validation change control program, product databases, and writing validation SOPs. A BS degree in a science discipline along with 2+ years of experience in a FDA regulated industry is preferred. Excellent writing and communication skills are required. Experience in a Biotech or Pharmaceutical environment preferred. **(Job Code S-149)**

■ QC SCIENTIST - METHOD VALIDATION (2 OPENINGS)
In this position, you will be responsible for developing protocols for validation and qualification of Quality Control methods meeting FDA and ICH guidelines. Other responsibilities will include executing protocols with support from Quality Control personnel and Analytical Development, and ensuring that all documents supporting the validation/qualification meet cGMP guidelines. An MS in Biochemistry or related field with 4+ years of experience, 2+ years in analytical method validation, or BS in Biochemistry or related field with 6+ years of experience with 2+ years in analytical method validation is preferred. **(Job Code S-141)**

Please send resume to: **Covance Biotechnology Services, Director—Human Resources, Job Code: ___, 3000 Weston Parkway, Cary, NC 27513; FAX: (919) 678-0555; Email: joe.mcmahon@covance.com** Only those selected for further consideration will be contacted. PRINCIPALS ONLY. Covance is an equal opportunity employer.

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Warren Lamboy: U. S. Department Of Agriculture

Careers In Agribio: Warren Lamboy, U.S. Department Of Agriculture's Agricultural Research Service

Companies large and small are making huge R&D investments in agricultural and environmental applications of biotechnology. It promises huge dividends in the 21st century. Agribiology is producing new varieties of food crops and animals that are more disease-resistant, productive, nutritious, or suitable for use in "pharming"—the production of drugs. Genetically engineered microbes and plants have a wealth of other applications in environmental remediation.

For a glimpse of career opportunities in agribiology, we visited with Warren Lamboy, head of the plant genetic resources unit at the U.S. Department of Agriculture's Agricultural Research Service (USDA/ARS) in Cornell, New York. With a Bachelor's degree in mathematics, a Master's in mathematical statistics, a Doctorate in plant biology, and five years in computer programming, Lamboy certainly knows both life sciences and informatics sides of the career equation.

Science (S): As you look at agribio careers in the United States and Western Europe right now, what fields are hottest and what science degrees are most in demand?

Lamboy (L): Wonderful career opportunities are available in activities that range from developing new varieties of plants to using bacteria to produce new drugs. Here at the ARS, we're in the process of filling more than 250 vacancies at the Ph.D. level. Bioinformatics is one of the hottest fields. It's not at all clear whether there will be people out there with the needed training and skills. For the broader range of job openings, many employers are looking for individuals with degrees in genetics—especially plant genetics, animal genetics, and microbial genetics. Candidates for these jobs must have a high level of computer skills.

S: What specific computer skills are most attractive to employers?

L: Candidates don't have to be computer programmers, but they should be able to hit the ground running when it comes to using a wide variety of software. They should be familiar with the major operating systems like Windows and the Mac OS. Unix skills would be a plus. Programming courses per se probably are not necessary unless they're aiming for a job that requires those skills. They should be facile with the Internet, capable of doing literature searches with computer technology, and have basic familiarity with a wide variety of software. When recruiting, I'd look for skills with databases such as Oracle, statistical software, graphics programs like Photoshop or Corel Draw, and overall software skills.

S: What degree combinations would really get your attention in a candidate for a bioinformatics position?

L: An undergraduate degree in the life sciences or computer sciences and an advanced degree in one of those fields would be superb preparation. A double undergraduate major would probably be most impressive to an employer. I'm thinking of a major in computer science combined with a degree in zoology, botany, chemistry, or biochemistry. Now suppose an individual with a double major like that went on for a graduate degree. That individual would be extremely competitive in the job market.

S: What about specific academic courses for an agribio career?

L: Let me mention just a couple. Quantitative skills are an important part of genetics research. Candidates don't need a degree in mathematics to land excellent jobs and be productive researchers. But they should not be held back by a lack of mathematical skills. Researchers need the mathematical and statistical background to decide whether the conclusions being drawn in biological research are valid based on the data. Mathematical statistics, in my view, is an essential undergraduate course. Undergraduate courses like agronomy or plant breeding also are excellent preparation.

S: Do you see any current trends or issues that may increase agribio job opportunities in the 21st century?

L: Legal and intellectual property rights issues probably will mean increased demand for individuals with law degrees and a basic familiarity with genetics and the life sciences. Just look at the legal issues that already have arisen over regulatory approval of transgenic plants and patenting of new plant varieties. Individuals with the appropriate background and knowledge will be in great demand.

S: When you're recruiting, what gives one candidate an edge over another?

L: Once the minimum requirements for scientific expertise are satisfied, a couple of factors become very important. One is flexibility and the demonstrated ability to use whatever technique is necessary to solve a problem. I look for evidence that a person is not wedded to a particular technique or approach, but has the desire and ability to identify and use the best type of tools and analysis for the problem. It's hard to evaluate that in a candidate. Often, however, individuals with a fairly broad training and familiarity with a lot of different tools are most flexible.

Dynavax Technologies Corporation is an innovative biotechnology company that discovers & develops novel DNA molecules for use in modulating immune system responses in the treatment and prevention of asthma, allergy, cancer and infectious diseases. We currently have an excellent opportunity in our San Francisco Bay Area headquarters for experienced chemists to join our interdisciplinary R&D team.

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You will lead our program to develop systems for the delivery of immunologically active nucleic acids. Requires a Ph.D. in Pharmaceutical Chemistry or Chemical Engineering with at least 2-5 years' experience in adjuvant/liposome/microparticle development. (Job# SCI0507-FC)

PROTEIN CHEMIST

You will lead a group to develop DNA protein conjugates. Requires Ph.D. and 2-5 years' industry experience with bioconjugation. (Job# SCI0507-PC)

MEDICINAL CHEMISTRY

PHARMACOLOGIST

As a hands-on project leader, you will coordinate our pre-clinical development efforts in the area of drug design, pharmacokinetics and in vitro/vivo testing utilizing your background in small molecule chemistry & pharmacology. Requires a Ph.D. in Pharmacology or Medicinal Chemistry and 5 years' related experience. Extensive experience with synthetic chemistry, metabolite analysis and in vitro/vivo bioactivity testing required. Experience with IND program management a must. (Job# SCI0507-P)

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DYNAVAX
TECHNOLOGIES

Major Development in Vascular Engineering

Faculty Positions
Department of Biomedical Engineering
University of Virginia

The University of Virginia, an established leader in biomedical engineering education and vascular engineering research, is seeking eight new faculty members to join a dynamic Department of Biomedical Engineering in the coming three years. The eight positions include two full professorships. Concurrent with this major faculty expansion and supported by a Development Award and a Special Grant from the Whitaker Foundation, the Department will move into a new Biomedical Engineering and Medical Science Building in 2001. The University is committed to establishing a world-class program in vascular engineering. The program expansion will catalyze innovative work in biomedical engineering and enhance partnerships with programs in electrical, chemical, materials, and mechanical engineering and cardiovascular, radiological and genetic sciences at the University of Virginia.

Immediate applications are invited now for three junior positions open in September, 1999. Applicants should hold a Ph.D. in biomedical engineering or related engineering discipline. One position will have a focus on magnetic resonance imaging, one in medical imaging, and one in: microsystems technology for biomedical applications, genetic engineering and biotechnology, or biomaterials and tissue engineering. Successful candidates will participate in our biomedical/vascular engineering education and research programs. Postdoctoral or industrial experience is viewed favorably. Women and minorities are encouraged to apply. Send or email a curriculum vitae, a statement of research interests, and names of three references to: J.S. Lee, Chair, Department of Biomedical Engineering, Box 377, Health Sciences Center, University of Virginia, Charlottesville, VA, 22908, or *jl@virginia.edu.*

Additional information can be found at *www.hsc.virginia.edu/bme. The University of Virginia is an Equal Opportunity/Affirmative Action Employer.*

MEETINGS

Cold Spring Harbor '99 Fall Meetings

Yeast Cell Biology
August 17 - 22 abstract deadline, May 26
Brenda Andrews, Chris Kaiser, Mark Winey

Eukaryotic mRNA Processing
August 25 - 29 abstract deadline, June 2
Adrian Krainer, James Manley, Timothy Nilsen

Mechanisms of Eukaryotic Transcription
September 1 - 5 abstract deadline, June 9
Nouria Hernandez, Robert Kingston, Richard Treisman

Bridging the Gap Between Sequence & Function
(Workshop) **September 7 - 9** abstract deadline, June 16
Eugene V. Koonin, Edward Uberbacher, Michael Zhang

Eukaryotic DNA Replication
September 15 - 19 abstract deadline, June 23
Thomas Kelly, Bruce Stillman

Microbial Pathogenesis & Host Response
September 22 - 26 abstract deadline, June 30
P. T. Magee, Stanley Maloy, Ronald Taylor

Programmed Cell Death
September 29 - October 3 abstract deadline, July 7
Hermann Steller, Craig Thompson, Eileen White

Neurobiology of *Drosophila*
October 6 - 10 abstract deadline, July 14
Ulrike Heberlein, Haig Keshishian

Molecular Approaches to Vaccine Design
December 2 - 5 abstract deadline, October 6
Rafi Ahmed, Dennis Burton, Margaret Liu

Physiological Genomics and Rat Models
December 9 - 12 abstract deadline, October 13
Howard Jacob, Doug Vollrath

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Principal Investigator

Ph.D. or equivalent in Molecular Biology or related with 6 - 10 years of proven technology or product development experience, capable of technically directing other scientists and technicians in development projects. Desire to work in a team setting within our Molecular Biology Product Development and Marketing groups on product design, capabilities and planning. Skills required: Protein expression in mammalian cells, vector design, cloning, knowledge of Baculovirus systems and strong interpersonal skills.

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Schools of Medicine and Veterinary Medicine

University of California, Davis

Qualified candidates are invited to apply for a professorial position at the level of **ASSISTANT PROFESSOR, ASSOCIATE PROFESSOR,** or **PROFESSOR,** depending upon qualifications. Applicants must have D.V.M. and Ph.D. degrees, post-doctoral experience, a substantial record of publication in mainstream journals, and enthusiasm for the concepts of comparative medicine and the investigation of infectious disease. The Center for Comparative Medicine is a new research center that uniquely interdigitates research and teaching programs of the Schools of Medicine and Veterinary Medicine, with close affiliation with the California Regional Primate Research Center and the University of California Mouse Biology Program. Faculty are sought whose research encompasses mechanisms of host-agent interaction during persistent infection, or pathogenesis of infectious disease at the host interface. Desired areas of recruitment include viral oncology and immunology of infectious diseases in animal models. The candidates will be expected to have (or rapidly establish) and maintain a robust extramurally funded research program and to participate in professional and graduate education in their field of interest. The successful candidate will hold an academic appointment in a relevant department in the School of Veterinary Medicine. This is a tenure-track position with start-up funding and long-term state sponsored ½ base salary support is provided. Review of applications will commence immediately and be accepted through July 1, 1999, or until the position is filled. Submit applications with letter of interest, curriculum vita, concise statement of present and future research plans, summary of teaching experience/philosophy, up to 3 representative reprints, and five references including name, address, phone and e-mail to: **Patricia Conrad, D.V.M., Ph.D., Search Committee Chair, Center for Comparative Medicine, University of California, Davis, CA 95616.**

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

NOVARTIS

Novartis Agribusiness Biotechnology Research, Inc., a division of Novartis, seeks talented individuals to join a research team whose goal is to develop and apply genetic and functional genomic technology to research problems, leading to new solutions for invertebrate control. The project will function within the dynamic environment of our Agribusiness Biotechnology Center, which provides high-throughput DNA sequencing, arraying, and bioinformatics support as well as a collegial environment comprising project teams from Novartis Animal Health, Seeds Biotechnology and Pharmaceutical sectors. Novartis encourages scientific publication.

CELL BIOLOGIST/GENETICIST

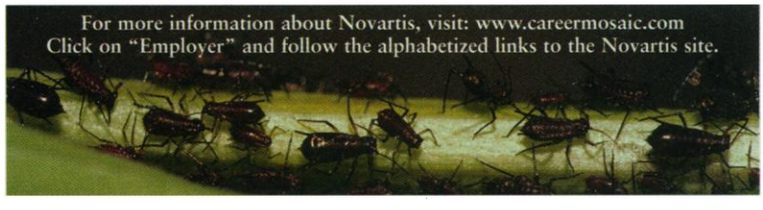
The successful candidate will use information gained from model organisms to explore signal transduction pathways and gene function. A Ph.D. in cell biology or genetics is required. Candidates with experience in the molecular genetics of *Drosophila* or *C. elegans* are preferred. Responsibilities of the position include communication and cooperation with 3rd party research groups and with on-going R&D efforts in Novartis Crop Protection. The successful candidate will have a proven record of research accomplishment, and a desire to apply state-of-the-art technology to problems with practical outcomes. Ability to work effectively in teams and to foster a collaborative research environment is essential. **Position #9923-SM-BRI**

MOLECULAR BIOLOGIST

This position will involve uncovering and defining novel gene function in invertebrates. Qualifications include an MS in a relevant scientific discipline along with 2+ years of laboratory experience and a thorough knowledge of molecular techniques. Computer skills should include manipulation of protein and nucleic acid sequences, and protein/nucleic acid database analyses. Methods for studying protein-protein interactions and/or experience in insect physiology and biochemistry beneficial. Strong communication skills and the ability to work as an effective team member are essential. Also important is the ability to work independently, design appropriate experiments and convey their data and interpretations to other members of the genomics team. **Position #9924-SM-BRI**

Novartis is a world leader in Life Sciences with our core businesses in Agribusiness, Healthcare and Nutrition. Our growing Biotechnology Research Center is located in the Research Triangle Park near Raleigh, Durham and Chapel Hill, North Carolina, better known as The Triangle. The Triangle gets its name from the triangle shaped by drawing lines between three research universities: Duke University in Durham, The University of North Carolina in Chapel Hill, and North Carolina State University in Raleigh.

Novartis Agribusiness Biotechnology Research, Inc., offers a competitive salary commensurate with qualifications and experience, a comprehensive benefits package, and an environment conducive to professional achievement. Qualified candidates should forward a resume and cover letter to: novartisbiotech@hiresystems.com (indicate the position #___ in the subject area). To ensure your information is uploaded into our HR System, please do not send your resume and cover letter as attachments. We are an Equal Opportunity Employer M/F/D/V.



Join the Ambion Team!

Ambion, The RNA Company
Located in Austin, Texas, Ambion is a rapidly growing biotechnology company that was founded in 1988 and recently recognized as one of "Austin's 50 Fastest Growing Private Companies" by the *Austin Business Journal*. Ambion has become a leading life sciences and diagnostic products company by providing unique tools for biomedical and molecular biology research with a strong emphasis on developing techniques and products for the isolation, analysis and detection of RNA.

We offer a stimulating work environment, competitive salary, company-paid insurance, 401(k) plan, and an employee bonus program.

Austin is home to the University of Texas and the state capital. It is on the edge of the Texas Hill Country with nearby lakes and rivers that provide abundant recreational opportunities. Austin is widely recognized as one of America's most beautiful and livable cities.

Equal Opportunity Employer

RNA Diagnostics Division Manager
Job #200
We are seeking a seasoned professional to lead a division focused on business-to-business supply of molecular biology-related products into the diagnostic or industrial marketplace. This position also has a business development component seeking to identify opportunities to supply products into these markets. Qualified candidates should have a breadth of business experience from life science or diagnostic positions, preferably with direct experience in diagnostic nucleic acid testing.

RNA Diagnostics, Manufacturing and Operations
Job #201
Candidates should have the skills and experience necessary to manage a GMP production facility in the life science marketplace. Experience with the manufacture and QC of general laboratory solutions, nucleic acids and proteins is required.

Senior Scientist
Job #194
Candidates should have a Ph.D. and postdoctoral experience in molecular biology or a related field, a strong publication record, and an innovative and entrepreneurial spirit. Strength in protein engineering or protein chemistry is a plus.

Quality Control Manager
Job #192
Ambion seeks a dynamic scientist and team leader to head our Quality Control Department. A B.S. in molecular biology or a related field, M.S. or Ph.D. preferred, and strong experience in RNA-related techniques required. Previous experience in an industrial manufacturing and/or QC environment, and experience with ISO 9000 quality systems are highly preferred. Must interact well with both R&D and manufacturing scientists.

Ambion®
THE RNA COMPANY™

Send inquiries to:
Ambion, Inc. • 2130 Woodward St. • Austin, TX 78744 • tel(512)651-0200 • fax(512)651-0201 • email: resumes@ambion.com • www.ambion.com

FELLOWSHIP

BURROUGHS WELLCOME FUND

EXPANDED SUPPORT: Awards provide $332,500 over five years to support advanced postdoctoral training and initial faculty appointment.

Open to U.S. and Canadian biomedical scientists.

The application deadline for the 2000 award series is August 2, 1999.

The Burroughs Wellcome Fund is an independent private foundation whose mission is to advance the medical sciences by supporting research and other scientific and educational activities.

4709 Creekstone Drive, Suite 100
Durham, NC 27703-8472
Tel (919) 991-5100 Fax (919) 941-5884
E-mail: info@bwfund.org
Website: http://www.bwfund.org

BIOMEDICAL SCIENTISTS: TRAIN IN THE UNITED KINGDOM OR IRELAND

HITCHINGS-ELION FELLOWSHIPS

Support for Biomedical Scientists to Engage in Postdoctoral Training in the United Kingdom or the Republic of Ireland and to Begin a Faculty Appointment in the United States or Canada.

These fellowships are intended to help researchers early in their careers in the biomedical sciences and medically oriented behavioral sciences make the critical transition to becoming independent investigators. The awards support two years of postdoctoral training in the United Kingdom or Ireland, a transitional year either to complete training abroad or to return to North America for additional training, and two faculty years at a university in the United States or Canada. It is anticipated that up to five fellowships will be awarded.

Candidates must be U.S. or Canadian citizens or permanent residents. They must hold or expect to receive an M.D. or Ph.D. degree (or equivalent), and they generally must not have more than 24 months of postdoctoral experience. Candidates with more experience may be considered if they can demonstrate a clear need to participate in training in the United Kingdom or Ireland. Candidates in the behavioral sciences must be working in areas that have biomedical relevance.

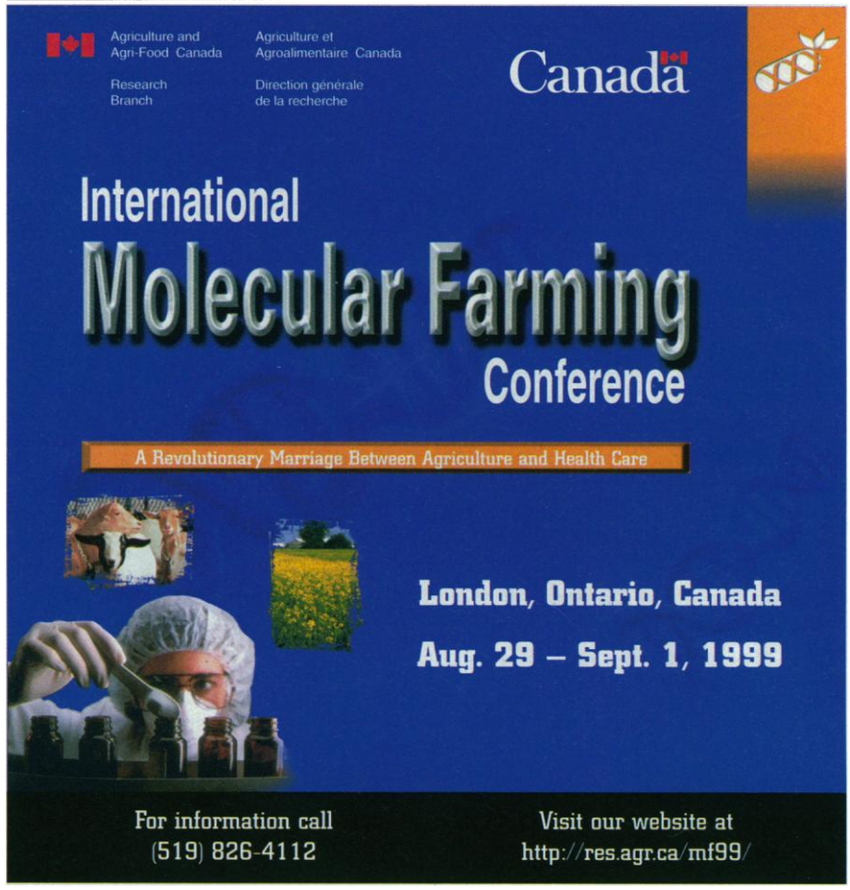
U.K. or Irish host institutions may include universities, medical or veterinary schools, scientific institutes, and government laboratories, but not industrial laboratories. Previous fellows have trained at the University of Cambridge, the University of Oxford, the Medical Research Council, and other leading research institutions.

Program information is available on BWF's website at http://www.bwfund.org

USDA

The USDA-Forest Service is searching for a Supervisory Research Geneticist to serve as Project Leader of the Southern Institute of Forest Genetics near Gulfport, MS. The successful candidate will direct a team of scientists engaged in population, quantitative, and molecular genetics studies. The personal research assignment is to investigate the genetic factors and evolutionary forces that influence genetic variation within and among forest species; and to apply this knowledge to facilitate population management strategies for southern forest ecosystems. The successful candidate will have significant latitude in research problem selection within the mission of the research work unit. The SIFG has developed a significant effort in molecular genetics and the project leader will be expected to initiate and promote research that incorporates biochemical and/or molecular markers for recombinant and/or physical mapping. The position will be GS-13/14. **DEADLINE: May 26, 1999.** To obtain a copy of the announcement on the internet log on to (**http://www.usajobs.opm.gov**) or for additional information, contact **Floyd Bridgwater at (Voice: 409-862-3908) or (E-mail: floyd@tamu.edu).**

CONFERENCE



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

POSTDOCTORAL POSITION IN DEVELOPMENTAL AND MOLECULAR BIOLOGY

A postdoctoral position is available to work on fundamental questions regarding the role of homeobox genes during murine early pattern formation [Development 121, 4045 (1995); Nature Genetics 21, 318-322 (1999)]. The work will involve the use of modern techniques in molecular and developmental biology as well as the generation and analysis of knock-out and transgenic mice. The position is ideal for someone with a biological background, who has recently obtained a Ph.D. and/or M.D. with laboratory experience, and who would like to pursue training in developmental biology.

Interested individuals with a strong background in molecular biology or mouse embryology should send their CV and the names of three references to:

Dr. Guillermo Oliver
http://www.stjude.org/departments/oliver.htm
Department of Genetics
St. Jude Children's Research Hospital
332 North Lauderdale
Memphis, TN 38105
USA

mayo

MAYO CLINIC POSTDOCTORAL POSITION

Two molecular virology laboratories in the Molecular Medicine Program are seeking a highly motivated individual to fill a joint postdoctoral position. The overall aim of the Molecular Medicine Program is the development of novel therapeutic genes and novel gene transfer strategies for eventual application in the clinic. The aim of the research project is to develop the technology to target retroviral vectors to specific tumor cells. The project will involve the use of retroviral display technology in model retroviral vector systems both *in vitro* and *in vivo*. Applicants must have a recent Ph.D. degree and be proficient in advanced molecular biology and tissue culture techniques. Research experience in virology, especially retrovirology, is highly desirable. Competitive salaries with full benefits are available to the successful candidates. Send letter of application, curriculum vitae, and names and contact details of three references to:

Mark J. Federspiel, Ph.D. or Stephen J. Russell, M.D., Ph.D.
Molecular Medicine Program
Mayo Clinic
200 First Street SW
Rochester, MN 55905
E-mail: federspiel.mark@mayo.edu

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

University of California
San Diego

Technical Director of Electron Microscopy and Immunocytochemistry Core Facility

A position is available for an individual with extensive experience in the preparation and analysis of cells and tissues by electron microscopy and immunocytochemistry.

The Director will be responsible for the operation of a core facility in the Division of Cellular and Molecular Medicine at the University of California School of Medicine at San Diego. He/she must have achieved a high level of competence in the preparation and analysis of cells and tissues by electron microscopy, light microscopy and immunocytochemistry, including immunofluorescence, ultrathin cryosectioning and immunogold labeling.

Other duties are to instruct technicians, students and postdoctoral trainees in the principles and practice of tissue preparation, ultracryomicrotomy, immunocytochemistry and microscopy, to work closely with faculty core director in development of new technologies, and to assist faculty in planning and data collection.

An MA degree or its equivalent and at least 5 years of experience are required. Salary and title based on years of experience and qualifications.

Send CV and names of 3 references to:

Marilyn G. Farquhar, Ph.D.
Division of Cellular and Molecular Medicine
University of California San Diego
9500 Gilman Drive
La Jolla, CA 92093-0651
mfarquhar@ucsd.edu

University of California is an Affirmative Action / Equal Opportunity Employer

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H. Lee Moffitt Cancer Center & Research Institute, a National Cancer Institute designated Cancer Center, is adjacent to the Health Sciences Center of the University of South Florida. The Cancer Center has excellent laboratory and clinical facilities including a freestanding screening center dedicated to subject recruitment for cancer prevention and control studies.

CELLULAR & MOLECULAR IMMUNOLOGY RESEARCH

Seeking applicants for Assistant, Associate and Full Professor-level positions in the area of molecular mechanisms for immune regulation and cancer immunology. Members of the Immunology Program work on signal pathways in lymphocytes and neutrophils, MHC Class I and II gene regulation and antigen processing in tumor cells, and molecular approaches to immunotheraphy. The laboratories are in new state-of-the-art facilities, shared by collaborative and supportive scientists focused on molecular oncology and signal transduction. Applicants must have a demonstrated track record in cancer research and preference will be given to those with established research programs. Successful individuals for Assistant Professor must hold an M.D. or Ph.D. degree with a minimum of 4 years post-doctoral training and evidence of recent peer-reviewed publications. Individuals at rank of Associate Professor must have a proven track record of independent research, leadership ability and training experience as evidenced by publications and extramural funding as well as 5 years of active and sustained participation as an Associate Professor. Academic rank and salary will be commensurate with experience and qualifications. These positions will be assigned to specific, mutually agreed upon departments within the College of Medicine with the possibility of tenure. Send current curriculum vitae and a brief statement of major academic interest to: **W.J. Pledger, Ph.D; Associate Center Director for Basic Research, H. Lee Moffitt Cancer Center and Research Institute, 12902 Magnolia Drive, Tampa, FL 33612.** Applicants must be postmarked by the deadline of June 30, 1999.

H. LEE MOFFITT
CANCER CENTER
& RESEARCH INSTITUTE
At the University of South Florida
A NATIONAL CANCER INSTITUTE
DESIGNATED CANCER CENTER

UNIVERSITY of SOUTH FLORIDA
COLLEGE OF MEDICINE 1956 STATE OF FLORIDA

The University of South Florida is accredited by the Commission of Colleges of the Southern Association of Colleges and Schools to award degrees at the baccalaureate, master's, specialist and doctoral levels, including the Doctor of Medicine. The Moffitt Cancer Center and the University of South Florida are Equal Opportunity/Equal Access/Affirmative Action employers. For disability accommodations, contact Jody Swanson at (813) 975-7894 a minimum of five working days in advance. TDD# (813) 974-2218.

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illumina™

Illumina, Inc. is an innovative and rapidly growing biotechnology start-up company based in San Diego. Illumina is developing biosensor and chemisensor array technology with applications in genomics. Illumina is currently developing rapid and high-throughput methods of genotyping and gene expression analysis using its proprietary self-assembled **Array of Arrays™** platform. We are seeking successful individuals for the following positions:

Assay Development Scientist:
Illumina is seeking a staff scientist trained in molecular biology/genomics for developing high-throughput genotyping assays on its proprietary fiber-optic DNA bead array format. The ideal candidate will have a Ph.D. and 2–5 years postdoctoral research experience in a molecular biology, genetic analysis, DNA diagnostics, and/or DNA signal amplification technology. The successful candidate will develop sensitive, robust, and highly-parallel assays for genotyping and DNA analysis. You will work closely with other scientists, engineers, and software developers in defining the optimal assay format. Excellent laboratory, organizational, and analytical problem solving skills will be required of the successful candidate.

Bioinformatics/Database Developer:
We are seeking an individual who is experienced in both statistical data analysis and database development. The successful candidate will develop a database on an NT platform for handling the vast amounts of data generated by our **Array of Arrays™**. Excellent analytical, organizational, communication, and written skills are required along with expertise in data processing, data integration, transformation, and organization. The successful candidate will have a BS+ in a computational science with 3+ years database design experience preferably on an Oracle platform. Knowledge of ODBC, Access (MS SQL preferred), Visual C++ and Visual Basic is desired. Relevant experience in statistical analysis packages such as SAS is also a plus.

Other Job Positions:
See Illumina web site for a description of other science and engineering job openings.

Illumina, Inc. offers a highly rewarding work environment with excellent potential for personal career growth. We offer competitive salaries, stock option packages, and great benefits. For consideration, please forward your resume with Job Title to: **Illumina, Inc., Human Resources, 9390 Towne Centre Drive, Suite 200, San Diego, CA 92121-3015. Fax: (619) 587-4297.**

www.illumina.com
An Equal Opportunity Employer

Roche Vitamins

Take biotechnology and your career in a new direction at Roche Vitamins Inc., an industry leader for human and animal health and nutrition. At the new home of our global Center for Excellence in Biotechnology in Nutley, NJ, we are developing new products and processes in a range of areas including vitamins, carotenoids, food ingredients, enzymes, and medicated feed additives.

SR. RESEARCH SCIENTIST
Biochemistry/Metabolic Engineering

The qualified candidate will implement existing enzyme assays, develop new assays, and use genetic and biochemical approaches to evaluate and modify carbon flow to and through biosynthetic pathways. This position requires a relevant Ph.D and 3-5 years of experience. You must have a broad technical background in enzymology, protein purification, assay implementation and development, microbial physiology, and characterization of biosynthetic pathways. Further requirements are broad experience in analytical methodologies, as well as experience in molecular biology.
(Job code #98079)

SR. RESEARCH SCIENTIST/ RESEARCH SCIENTIST
Microbiology/Microbial Physiology

The qualified candidates will have responsibilities which include the development of selections and screens for the isolation of structural gene and regulatory mutants, genetic characterization of such mutants, and analysis of carbon flow through biosynthetic pathways, using both growing cultures and cell suspensions. The individuals in these positions will interface extensively with molecular biology, biochemistry and fermentation development to create and evaluate production strains. Requirements include a Ph.D in microbiology or an M.S. in microbiology with 3-5 years of relevant experience, broad experience in analytical methodolgies (HPLC, GC, etc.), solid computer, data management and interpersonal communication skills. Previous experience in automation for high throughput screening of mutants is desirable.
(Job code #98084)

For consideration, forward your resume indicating position of interest with Job code #, and salary requirements, to: **Roche Vitamins Inc., Human Resources, 45 Waterview Boulevard, Parsippany, NJ 07054-1298.** Principals only. We appreciate your interest in Roche Vitamins Inc., but can only respond to qualified candidates. Roche Vitamins Inc. is an equal opportunity employer fully committed to diversity in the workplace.

CuraGen
Engineering Cures Through Genes

CuraGen's rapid growth and collaborations with Biogen, Genentech, Pioneer Hi-Bred International, Glaxo Wellcome, and Hoffmann-La Roche have created significant new career opportunities. Openings exist for exceptional individuals with backgrounds in medicine, molecular biology, human genetics, bioinformatics, and process engineering. Successful CuraGen employees have an entrepreneurial spirit, a passion for their work, a talent for organization, and thrive in a challenging, team-oriented environment.

Vice-President of Collaborative Research

Responsibilities include scientific oversight of collaborative research with pharmaceutical, biotechnology and agricultural companies. You will be engaged in shaping and guiding the organization in its successful commercialization of genomics. Direct reports include Directors of Life Science and ***Pharmaceutical Collaborations*** (open position, Job Code: 46-99), each of whom manage client focused scientific teams. Must be a skilled molecular biologist, expert in the field of genomics, and have a broad understanding of the molecular basis of human disease. Positions require a Ph.D. or M.D. and 6-10 years of experience managing collaborative research in the area of human disease and genomics. Job Code: 70-99

Group Leaders – Disease Gene Discovery

You will use CuraGen's unique genomics technology platform to identify disease or trait related genes as well as develop effective protein and small molecule drugs. Must have a strong scientific and management background and have demonstrated the ability to build teams, organize and analyze large amounts of genomic information, and publish major scientific works. Ph.D. or M.D. in biological sciences with 3-5 years experience leading genomics efforts. Job Code: 33-99

Director – Process Development & Sequencing Technology

The position requires a technically focused molecular biologist or engineer with broad expertise in high-throughput molecular biology and process development, as well as proven management experience. Must be able to identify and implement process improvements and new technologies. The successful candidate will possess superior organizational, analytical and communication skills, thrive in a project-driven environment, and have an established record of innovation. Ph.D. with 4-8 years of experience managing an interdisciplinary scientific team. Job Code: 122-99

Group Leader – Bioinformatics

As the leader of a team, you will use your talents in computer science and biology to specify, design and build bioinformatics systems to be used by CuraGen and its collaborators. Ph.D. in computational or biological sciences or equivalent experience and 2-4 years experience leading a software product development team. Job Code: 59-99

Please send cover letter, resume/CV and 3 letters of recommendation and/or references. EOE

555 Long Wharf Drive
New Haven, CT 06511 USA
www.curagen.com
Email: jobs@curagen.com

HELP US DISCOVER THE NEUROPHARMACEUTICALS OF THE FUTURE

SIBIA NEUROSCIENCES, INC. has established an impressive record in the development of innovative technologies integral to neuroscience research and drug discovery. The following positions are available to support our efforts to identify and develop the neuropharmaceuticals of the future.

BEHAVIORAL PHARMACOLOGY

Leader Of Behavioral Pharmacology Laboratory

Requires PhD and at least 5 years experience managing the use and development of relevant models for psychiatric and neurological disorders.

Staff Scientist

Use behavioral and neurobiological approaches to characterize receptor subtype-selective agents. PhD and post-doctoral experience required.

Research Assistants/Associates

BS/MS and experience working with therapeutic models for behavioral testing of receptor subtype-selective compounds.

NEUROPHARMACOLOGY

- PhD, at least 2 years post-doctoral experience and a strong background in Neurochemistry and/or *in vivo* pharmacology, including microdialysis.

PHARMACOKINETICS, ADME, AND TOXICOLOGY

- PhD with 4 years experience to be a Laboratory Head
- PhD with 2 years post-doctoral experience performing ADME/Pharmacokinetics
- PhD in Toxicology for in-house safety

CHEMISTRY

BS/MS Assistant/Associate Scientist

- Combinatorial Chemistry
- Medicinal Chemistry
- Analytical Chemistry

MOLECULAR/CELLULAR NEUROBIOLOGY

Two positions: one requires BS with 2 years experience; the other requires BS/MS with 4+ years in mammalian cell culture and immunochemical analysis of proteins.

Located on San Diego's beautiful La Jolla coastline, SIBIA Neurosciences offers not only a challenging environment in an aesthetically pleasing setting, but also a competitive salary and benefits package. Send your C.V. with the names of 3 references to: Lynn Alba, SIBIA Neurosciences, Inc., 505 Coast Blvd., South, Suite 300, La Jolla, CA 92037, fax (619) 452-9279, email lalba@sibia.com. See our website at www.sibia.com. EOE.

SIBIA
Neurosciences, Inc.

Scientists/ Senior Scientists

Iconix Pharmaceuticals, Inc. is a biotech start-up company developing and applying new technologies in the area of chemical genomics. Our innovative approaches to chemical annotation of genes will advance the discovery process for human drugs through the systematic acquisition, integration, and analysis of genetic & chemical information. Our continued growth has created an exciting challenge for experienced, hands-on Scientists to join our interdisciplinary R&D team.

Molecular & Cell Biology

Candidates must possess a Ph.D. in biochemistry, cell biology, immunology, pharmacology, virology or molecular biology; 2-6 years of post doctoral research experience; hands-on experience with mammalian cell biology & the isolation of mammalian clones; a solid understanding of mammalian cell transfection, infection, and cloning; familiarity with reporter gene analysis & retroviral vector construction/use; and excellent written/verbal communication skills. Knowledge of FACS helpful. Experience managing & directing research teams is highly desirable. (Job# KJ765)

Antiviral Therapeutics

You will develop bioassays in microorganisms & mammalian tissue culture cells. Candidates must possess a Ph.D. and 2+ years of postdoctoral experience in Molecular Biology, Genomics, Biochemistry, Cell Biology, Genetics, or related biological sciences. Expertise with gene expression profiling using differential display methods is preferred. (Job# RK886)

We offer an attractive salary & benefits package, stock options, and a rare opportunity to make significant scientific contributions. To apply, please send resumes to: Iconix Pharmaceuticals, Inc., Human Resources, (Attn: Job#) 850 Maude Avenue, Mountain View, CA 94043; fax: (650) 567-5545; email: hr@iconixpharm.com. We are an equal opportunity employer.

ICONIX PHARMACEUTICALS

www.iconixpharm.com

Associate Chief Hydrologist for Scientific Programs, ES-1315 Senior Executive Service (SES)

The U.S. Geological Survey (USGS) is seeking candidates for the full-time position of Associate Chief Hydrologist for Scientific Programs in the Water Resources Division. This is a career civil service position, in the SES, with a salary range from $110,351 to $125,900 per annum.

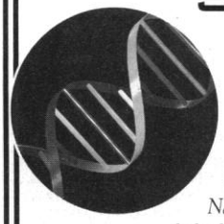
The Associate Chief Hydrologist for Scientific Programs directs and coordinates the development and budgeting of all scientific programs and provides divisionwide leadership in the development of national program plans and initiatives. The incumbent develops division policies, goals, and objectives related to scientific program development in accordance with national priorities, conducts and provides oversight to a wide range of analytical studies of strategic importance to the division; provides liaison with the Bureau, the Department of the Interior, other Federal agencies, the Office of Management and Budget, and congressional committees in the conduct of major analytical studies; works closely with other staff offices and with Regional offices in the development of plans and special studies; and provides a focal point for the economic evaluation of scientific programs and consultation to the Division Chief and other senior managers on these evaluations.

Individuals interested in this position should call (703) 648-6131 to receive a complete vacancy announcement which describes job requirements (including knowledges, abilities, and skills (KSAs) required for the position), an application, and evaluation procedures. Applications (Optional Application for Federal Employment, OF-612, or resume), must be received at the following address by 05/26/99, and should reference announcement #SES-99-3. A Reference and Qualifications Analysis form and a narrative qualification statement addressing the KSAs should also be submitted by the closing date and will be used in the evaluation of candidates.

U.S. Geological Survey, Personnel Staffing Services Branch, 601 National Center, Reston, Virginia 20192

The U.S. Geological Survey is an Equal Opportunity Employer
U.S. Citizenship is required

U.S. Geological Survey



SCIENTIFIC WRITER

RESEARCH & DEVELOPMENT

Biogen, Inc., winner of the 1998 U.S. National Medal of Technology, has established a unique record of success as one of the world's premier biopharmaceutical companies. Pioneering research by our scientists has led to the introduction of several important new medical therapies, including AVONEX® (Interferon beta-1a), the most prescribed therapy in the U.S. for relapsing forms of multiple sclerosis. We are staking our future growth on the development of our next generation of pharmaceutical products, five of which are currently being tested in human clinical trials. Today we are seeking an experienced Scientific Writer to join our expanding team in Cambridge.

DEFINING SUCCESS *in* BIOTECHNOLOGY

In this newly created position, you will be challenged with establishing and managing a scientific writing function within the Biogen Research Department. Responsibilities will include writing/editing of preclinical study reports and scientific papers on our major autoimmune-related and transplantation-related development projects; successfully formulating and implementing the process; gathering critical information or draft reports and manuscripts from key Biogen scientists and external collaborators; handling data; and coordinating Information Systems (IS) for document handling for the research organization. These reports include, but are not limited to, multiple regulatory filings, as well as significant technical input to the major subsections as well as the documents themselves. The ideal candidate should have a PhD, a strong scientific background in Immunology (or closely related field), and a demonstrated track record of effective writing. Excellent interpersonal skills are also essential to successfully coordinate the interactions of a large number of personnel in multiple departments while achieving critical deadlines. Some prior managerial experience is a plus, but not essential.

Biogen has an outstanding record of leadership and accomplishment in the biotechnology field. We have one of the strongest financial profiles in the industry, and our compensation and benefits package, including equity participation, is unmatched. We've created an environment designed to attract and retain the world's most accomplished talent, and we invite you to forward your resume to: Biogen, Inc., Source Code RC-RL, Resume Processing Center, P.O. Box 708, Burlington, MA 01803; Fax: (617) 679-2546; Email; biogen@webhire.com (please include Source Code RC-RL in the subject line). Biogen is an Equal Opportunity Employer. No phone calls, please.

BIOGEN®

DELIVERING ON THE PROMISE OF BIOTECHNOLOGY®

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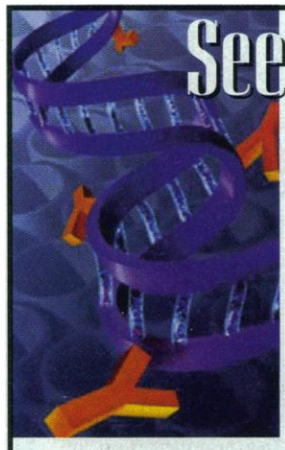

See the invisible

DAKO *is a world leader in the manufacture & distribution of cancer diagnostic products utilized in pathology laboratories around the world. Our commitment to cancer research is evident as the company continues to break new ground in developing, manufacturing and selling research & diagnostic products. We have the following dynamic, high-profile positions available for experienced professionals:*

SUPPORT THE FIGHT AGAINST BREAST CANCER

DAKO

Scientist/Project Manager Immunohistochemistry

We are seeking a creative, highly motivated individual with expertise in biochemistry/chemistry to assist team in developing new reagents for use in immunohistochemistry & related technologies, and to represent DAKO at professional meetings & conferences. Candidate must have a Ph.D. in Biochemistry or related and prior project management & supervisory experience. A minimum of 2-5 years' experience in developing diagnostic reagents & products and experience in Pathology & medical instrumentation desirable.

Manager, Molecular Pathology

You will direct a team of scientists developing molecular tests for cancer diagnosis, using your knowledge of cancer diagnostics and your experience with a wide variety of nucleic acid hybridization assay formats including ISH, blotting and amplification methods to strengthen and build our innovative product portfolio. Candidate must have a Ph.D. in Molecular Biology, Pathology or a related, 7+ years' molecular diagnostic experience, a working knowledge of assay formats & non-radioactive nucleic acid labeling chemistries, familiarity with Good Manufacturing Practices, and the ability to manage multiple projects. Experience supervising scientific professionals and in an industrial R&D setting is highly desirable.

Clinical Diagnostics Product Manager

You will create strategic programs for HercepTest & future clinical markers and forge alliances within the medical diagnostics industry to establish leading market share. Other responsibilities include profit/loss, inventory management, developing marketing communications programs, product development concept contribution and clarifying billing & retirement issues. Candidate must have 5+ years' experience, a strong network with medical oncologists, BS (MBA preferred), the ability to inspire teamwork, excellent communication skills, and strong familiarity with Internet apps, Excel, Word & PowerPoint. Requires 50% travel.

DAKO

Please submit your resume and cover letter to:
DAKO Corporation, Attn: HR,
6392 Via Real, Carpinteria, CA 93013
or fax: 805-684-5935. EOE

www.dakousa.com

Research Opportunities

Mount Sinai School of Medicine is a leader in medical research and education. We have the following opportunities for experienced research professionals:

Mount Sinai®

Post-Doctoral Fellow

A post-doctoral position is immediately available at the Institute for Gene Therapy and Molecular Medicine. The project involves the identification of genes involved in strain-dependent differences in hematopoietic stem cell pool size and kinetics in mice. A solid background in molecular biology and genetics is desirable. **Reply with C.V., research experience and names of three references to: Hans Snoeck, M.D., Ph.D., Institute for Gene Therapy and Molecular Medicine, Box 1496; Fax: 212-803-6740; e-mail: hans_snoeck@smtplink.mssm.edu**

Post-Doctoral Fellows

Post-doctoral positions are available in a molecular hematology laboratory whose focus is on novel therapeutic approaches to the treatment of hemoglobin disorders and leukemias. Experience in molecular and/or cellular biology is desirable. **Reply with C.V. and names of three references to: Dr. George Atweh, Box 1079; Fax: 212-369-8375; e-mail: gatweh@smtplink.mssm.edu**

Post-Doctoral Fellow

A post-doctoral position is available for a Ph.D. or M.D. in cell or molecular biology for projects in the regulation of tissue factor and MCP-1 synthesis in vascular cells. **Reply with C.V. to: Mark Taubman, M.D., Director, Molecular Cardiology, The Zena and Michael A. Wiener Cardiovascular Institute, Box 1030; Fax: 212-860-7032; e-mail: M_taubman@smtplink.mssm.edu**

Research Assistant

A Research Assistant position is available immediately in the Molecular Cardiology Laboratory. Experience with recombinant DNA techniques, PCR, cloning, RNA isolation, protein purification, tissue culture, and immunohistochemistry required. Master's degree preferred. **Reply with C.V. to: Mark Taubman, M.D., Director, Molecular Cardiology, The Zena and Michael A. Wiener Cardiovascular Institute, Box 1030; Fax: 212-860-7032; e-mail: M_taubman@smtplink.mssm.edu**

We offer a salary commensurate with experience and excellent benefits. For consideration, please follow "Reply to" information for your position of interest, to: **Mount Sinai School of Medicine, One Gustave L. Levy Place, New York, NY 10029-6574.** We are an equal opportunity employer fostering diversity in the workplace.

Mount Sinai School of Medicine

Purdue Pharma L.P. is a rapidly expanding ethical, research-oriented pharmaceutical leader bringing new and improved treatments for diseases and their symptoms to the world. Our new R&D center in Southern Westchester County, fifteen minutes from the GWB has the following opportunities available:

RESEARCH SCIENTISTS

- **PRE-CLINICAL PK**
  Oversee PK study design and compound development programs; document results; prepare protocols; and provide support. Entry-level Ph.D. or MS with 3-5 years' related experience required. Background in animal/human PK assessments and PC literacy (WIN NONLIN, SAS, etc.) essential.
- **CLINICAL PK**
  Provide PK input into the design, data analysis and reporting of phase 1 studies. Ph.D. or Pharm. D. with appropriate experience required. Knowledge of current PK software and excellent written/verbal communication skills necessary.
- **BIOANALYTICAL**
  Work on method development/quantitative analysis of drugs in biological matrices; handle sample preparation and instrument operation (HPLC, LC-MS/MS, GC/MS, etc.) in a GLP environment; and evaluate data. BS, MS or Ph.D. in Biology, Pharmacology, Chemistry or related field required, along with 3+ years' related experience.

TOXICOLOGIST

Oversee non-clinical drug safety evaluation studies, including selection/monitoring of contract labs. Ph.D. and 3 years' related experience essential.

FORMULATION SCIENTIST

Develop and produce blinded clinical comparators and placebos for clinical trials. Knowledge of solid dosage production (coating, encapsulation, granulation, etc.) required. Hands-on opportunity with minimal supervision.

We offer competitive salaries, an extensive benefits package and excellent opportunities for personal and professional growth. Please mail/fax resume, indicating position of interest, to: **Human Resources Dept-SM, Purdue Pharma L.P., 444 Saw Mill River Road, Ardsley, NY 10502; FAX: (914) 709-2590.** Corporate standards require drug testing and background investigation. We are an equal opportunity employer committed to a diverse workplace.

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- **Field Service Engineers**
  Experience in chemistry, hematology or immunology preferred.
- **Account Managers – Biochemical Sales**
- **Marketing Manager - Hematology**
  (Indianapolis)

Who to contact

We offer an excellent compensation and benefit program including 401(k). Qualified candidates should send a resume, including salary requirements to: **Roche Diagnostics, Attn: Science -5/7/99, 9115 Hague Road, Indianapolis, IN 46250, or e-mail to Roche@webhire.com.** Principals only please. Roche is committed to providing equal opportunity to a diverse workforce.

www.roche.com

POSTDOCTORAL POSITION

NIEHS, NIH has a postdoctoral position available immediately to investigate (1)structure-activity requirements for the CYP2C enzymes using cDNA expression systems in bacteria and (2) polymorphisms and gene structure. Technical experience in molecular genetics and biochemistry is needed in several of the following areas: site-directed mutagenesis and construction of chimeras, use of cDNA expression systems such as bacteria, cloning techniques, strategies for genomic mapping and sequencing of PAC or YAC clones, DNA sequencing, molecular biology of CYP enzymes, protein modeling. Requires a Ph.D. in biochemistry, molecular genetics, molecular pharmacology or related field. Applicant must have less than five years of postdoctoral experience. The initial appointment is renewable up to five years with a starting salary of at least $26,500 depending on experience. Nonresident aliens may be considered if eligible to receive a J-1 visa. Starting date June-Dec. Applicants should submit a curriculum vitae and three references to: **Joyce Goldstein (A3-02), NIEHS, P.O. Box 12233, Research Triangle Park, NC 27709. Telephone:** 919-541-4495; **FAX:** 919-541-3647; **e-mail:** Goldeste1@niehs.nih.gov.

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RPI, a leader in the development of ribozyme-based pharmaceutical products and functional genomics, is currently seeking the following to join our research and development team in Boulder, Colorado:

Scientist/Biology

Seeking a Ph.D.-level scientist with extensive experience in cellular and molecular biology. Will be responsible for developing cell culture systems and phenotypic assays for new gene targets. Experience in lipid-mediated oligonucleotide delivery to cells a plus. PCR/Taqman and/or ELISA design experience desirable. Must be an independent thinker with the ability to direct projects and interact with scientists from diverse disciplines. Applicants must have a Ph.D. or equivalent and at least 3 years of experience. Excellent communication skills required. Please refer to Job #021.

RPI offers a competitive salary and an excellent benefits package, including stock options. For consideration, send a curriculum vitae and the names of three references to: Ribozyme Pharmaceuticals, Inc., 2950 Wilderness Place, Job #021, Boulder, CO 80301. Fax: (303) 449-6995. E-mail: jobs@rpi.com

Visit our Web site at: http://www.rpi.com

No phone calls, please. We are an equal opportunity employer.

ΩRPI

STONY BROOK POSTDOCTORAL POSITIONS

STATE UNIVERSITY OF NEW YORK

The following positions are anticipated to be available in the Summer/Fall 1999.

Signal transduction pathways activated by cytokines and viral infection
Dr. Nancy C. Reich, Pathology

Planetary Aeronomy: Modeling thermospheres/ionospheres of the earth and planets
Dr. Jane L. Fox, Marine Sciences Research Center

Transcriptional regulation of genes expressed in human endometrial cells
Dr. Linda Tseng, OB/GYN

Medical Imaging: SPECT, virtual colonoscopy; Dr. Z. Liang, Radiology

Lysophosphatidic Acid: Synthesis, inactivation and role in human cancer
Dr. Andrew J. Morris, Pharmacology

Molecular Virology: Membrane permeabilization by rotavirus protein VP5
Dr. Erich R. Mackow, Medicine, Molecular Genetics and Microbiology

Viral Signaling: Signaling pathway activation by rotavirus and hantavirus proteins
Dr. Erich R. Mackow, Medicine, Molecular Genetics and Microbiology

Viral Receptors: Hantavirus interactions with cellular integrins
Dr. Erich R. Mackow, Medicine, Molecular Genetics and Microbiology

Cell-initiated regulation of adenylyl cyclases by adenine nucleoside 3' polyphophates
Dr. Roger A. Johnson, Physiology and Biophysics

Signal transduction by tyrosine kinases; Dr. W. Todd Miller, Physiology and Biophysics

Proteases and vascular biology; Dr. Wadie F. Bahou, Hematology

Genetic regulation and modification of vascular endothelial cells
Dr. Wadie F. Bahou, Hemotology

Protein Biochemistry: Interactions between APP and hemostasis proteins
Dr. Willian E. Van Nostrand, Medicine

Regulation of the "endogenous marijuana" neuromodulatory system
Dr. Dale G. Deutsch, Biochemistry and Cell Biology

Cellular and systems-level basis of oculomotor behavior
Dr. James W. Gnadt, Neurobiology and Behavior

Adhesion mechanisms in fungal pathogenesis
Dr. Neta Dean, Biochemistry and Cell Biology

Record from thalamus in behaving monkeys
Dr. S. Murray Sherman, Neurobiology and Behavior

Record in-vitro from thalamic slices; Dr. S. Murray Sherman, Neurobiology and Behavior

Polymer Physics/Colloid Science: Polyelectrolyte surfactant complexes, protein folding and gene therapy; Dr. Benjamin Chu, Chemistry

CD154 (CD40 Ligand): Airway inflammation/asthma; Dr. Anthony M. Szema, Medicine

Membrane protein folding; Dr. Erwin London, Biochemistry and Cell Biology

Subunit assembly and localization of ion channels in mammalian neurons
Dr. James S. Trimmer, Biochemistry and Cell Biology

Mouse Genetics: Embryonic patterning, mesoderm induction, neural crest cell differentiation; Dr. Bernadette C. Holdener, Biochemistry and Cell Biology

Glycoproteins: Biosynthesis in yeast and function in fertalization in higher organisms
Dr. William J. Lennarz, Biochemistry and Cell Biology

Structural Biology: Experimental studies of protein folding and amyloid formation
Dr. Daniel P. Raleigh, Chemistry

Yeast genes and mutants affecting nuclear structure and function
Dr. Rolf Sternglanz, Biochemistry and Cell Biology

Invasive Angiogenesis: Function and regulation of endothelial integrins
Dr. Marcia G. Tonnesen, Dermatology

Cell-matrix Interactions: Cell signaling and motility; Dr. Richard A. Clark, Dermatology

Antibacterial Compounds: Design, synthesis and characterization of enoyl-reductase inhibitors; Dr. Peter J. Tonge, Chemistry

Organic Chemistry: Reactions and properties of non-natural conjugated systems
Dr. Nancy S. Goroff, Chemistry

Immunology/Microbiology: Transgenic HIA B27 model of spondyloarthritis
Dr. Charles R. Steinman, Medicine

Submit resumes, indicating the name of the researcher, by May 18, 1999 to: George Meyer, Office of the President, State University at Stony Brook, Stony Brook, NY 11794-0701; e-mail: *postdocads3@notes.cc.sunysb.edu*

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2 Postdoctoral Positions in Research

We are seeking individuals with training in immunology, virology, or molecular biology with interest in studying the structure and function of monoclonal antibodies and their target molecules used for the prevention of human infections. Opportunities include the isolation and characterization of viral isolates resistant to antibody neutralization in vitro and in animal models, generation of co-crystals of antibody with antigenic fragments for structural studies, and mutational analysis of epitopes. Individuals with previous post-doctoral experience will be considered. Candidates should possess a Ph.D. in a biological science; and good interpersonal, communication, and organizational skills.

Please forward resumes to: **MedImmune, Inc., HR Dept., referencing Job Codes 916/917, 35 West Watkins Mill Road, Gaithersburg, MD 20878. Fax: (301) 527-4215. E-mail: jobopenings@medimmune.com**

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MedImmune, Inc.

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mayo

Research Fellow/ Postdoctoral Positions

Mayo Clinic Scottsdale

At least two postdoctoral positions are available beginning August 1 or later in an established laboratory that is soon relocating to Mayo Clinic Scottsdale. Individuals are needed to conduct studies on the functions of molecular chaperones, particularly relating to the regulation of various signaling pathways as mediated by heat shock proteins, large immunophilins and other components of the chaperone machinery. A full spectrum of experimental approaches is being used, ranging from crystallographic studies to gene targeting. Applications are invited from individuals with a Ph.D. in molecular biology, biochemistry, or related area.

Send c.v. and names of three references to:

David F. Smith, Ph. D.
Mayo Clinic Scottsdale
S.C. Johnson Medical Research Building
13400 East Shea Boulevard
Scottsdale, AZ 85259
or email to: runkel.janet@mayo.edu

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CONFERENCE

Millennium Conference on Nucleic Acid Therapeutics

8–11 January, 2000
Clearwater Beach, Florida

http://asterix.jci.tju.edu/wickstrom/millennium.html

OLIGONUCLEOTIDE DERIVATIVES: M. Koziolkiewicz, A. Murakami, P. Nielsen, B. Shaw, J. Summerton, V. Zarytova **MECHANISMS AND PHARMACOLOGY:** S. Agrawal, S. Freier, R. Juliano, J.-J. Toulmé, U. Langel **OLIGONUCLEOTIDE CHIPS:** M. Boyce-Jacino, G. McGall, A. Mirzabekov, E. Southern **PRECLINICAL TRIALS:** E. Chang, P. Iversen, V. Vlassov, C. Wahlestedt, P. Zamecnik **GENE THERAPY VECTORS:** E. Kmiec, D. Mercola, R. Vile, E. Wickstrom **CLINICAL TRIALS:** Y. Cho-Chung, B. Sikic, A. Stopeck, S. Swisher

REGISTRATION AND ABSTRACT DEADLINE: 15 October 1999. $450 for attendance, abstracts, and meals. Register at the Conference web site, or fax to 1-215-923-9214, or 1-815-352-0382.

QUESTIONS: Please see the Conference web site, or email the organizer, **Prof. Eric Wickstrom, eric.wickstrom@mail.tju.edu.**

TIGR

THE INSTITUTE FOR GENOMIC RESEARCH

The Institute for Genomic Research (TIGR) is a not-for-profit research institute founded in 1992. The scope of research at TIGR includes structural, functional, and comparative analysis of genomes and gene products in viruses, eubacteria, pathogenic bacteria, archaea, and eukaryotes, both plant and animal, including the mouse, the rat and the human. Additionally, bioinformatics based research projects encompass investigations into genome composition, gene-finding algorithms, sequence assembly and alignment, and modeling of protein structure. TIGR's pioneering approach to genome based analysis produced the first-ever genome sequence of a free living organism in 1995, and TIGR scientists have completed twelve more genomes and chromosomes since then, making it the world's premier center of whole genome sequencing and analysis. TIGR currently has 200 staff including 30 faculty.

We are seeking highly qualified and motivated candidates to assume positions on the TIGR faculty. We have targeted the areas of bioinformatics, microbial functional genomics, and mammalian genomics for faculty expansion. The positions require a Ph.D. or M.D. degree and postdoctoral experience, ability to develop and sustain an extramurally funded research program. Positions are available at junior and senior levels, commensurate with experience. TIGR also has employment opportunities for highly motivated postdoctoral fellows. Details can be obtained at http://www.tigr.org/career/.

Interested candidates please forward your *curriculum vitae*, research interests, and contact information for three references to:

The Institute for Genomic Research
Attn: Human Resources/Science
9712 Medical Center Drive
Rockville, MD 20850
Email: jobs@tigr.org Fax: (301) 838-0208
EOE

Postdoctoral Fellow Position
Genetics and Clinical Services Branch

Postdoctoral Fellow is sought by the National Eye Institute (NEI), National Institutes of Health (NIH). The position is located in Bethesda, Maryland. Positions available for M.D. or Ph.D. with training in biochemistry, molecular genetics or clinical genetics to investigate inherited visual diseases. All applications should include the following: a statement of research interest; a career synopsis; a current curriculum vitae and bibliography; and the name and addresses of references. Salary based on education and experience beginning at $30,000. A list of the requirements or additional information about the position may be obtained by contacting Ms. Wild at the address listed below. Applications should be sent to:

NIH, National Eye Institute
Attention: Cheryl Wild
Building 31, Room 6A18
31 Center Drive – MSC 2510
Bethesda, Maryland 20892-2510

Applicants with access to E-mail may transmit their materials to the following E-mail address: **CWild@nei.nih.gov** Application materials may be Faxed to (301) 496-3958 (Please limit Faxed materials to no more than 10 pages). Candidates must be either U.S. Citizens or Permanent Residents.

SELECTION FOR THIS POSITION WILL BE BASED SOLELY ON MERIT, WITH NO DISCRIMINATION FOR NON-MERIT REASONS SUCH AS RACE, COLOR, RELIGION, GENDER, NATIONAL ORIGIN, POLITICAL AFFILIATION, MARITAL STATUS, DISABILITY, AGE, SEXUAL ORIENTATION, OR MEMBERSHIP OR NON-MEMBERSHIP IN AN EMPLOYEE ORGANIZATION.

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STAFF SCIENTIST POSITION

Ophthalmic Genetics and Clinical Services Branch, National Eye Institute, National Institutes of Health, Bethesda, Maryland. Position available for Ph.D. with experience in protein crystallography, site-directed mutagenesis, protein expression and purification of βγ-crystallins, theoretical analysis of beta-structural proteins and structural interpretation of gel-filtration, and analytical centrifugation data. Knowledge of the UNIX operating system, programming languages, molecular modeling software and protein databases is essential for this position. Applicants must have at least 3 years of experience in molecular biology of βγ-crystallins. Salary based on education and experience beginning at $58,000 for qualified applicants. All applications should include the following: a statement of research interest; a career synopsis, a current curriculum vitae and bibliography, and the names and addresses of references. A list of the requirements or additional information about the position may be obtained by contacting Ms. Cheryl Wild, Personnel Management Specialist, National Eye Institute, Building 31, Room 6A-18, Bethesda, Maryland 20892, telephone 301-496-4274; FAX 301-496-3958, e-mail: **CWild@nei.nih.gov**

Applications must be received or postmarked by **June 30, 1999.** Incomplete applications will not be considered.

Candidates must be either U.S. Citizens or Resident aliens who have a Ph.D. degree.

Selection for this position will be based solely on merit, with no discrimination for non-merit reasons such as race, color, religion, gender, national origin, political affiliation, marital status, disability, age, sexual orientation, or membership or non-membership in an employee organization.

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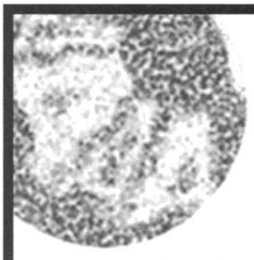

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- Hands-on experience in cell culture with a variety of cell types and media development
- Expertise in adapting cells to grow in serum-free media, subcloning and screening techniques with cell culture

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- PhD
- Formulation development of biological macromolecules, physicochemical assays, HPLC, analytical spectroscopic techniques and GLP/GMP

Scientists and Research Associates (Microbiology)

- PhD (for Scientists)
- Experience with cell-based assays, aseptic techniques, or experience developing nucleic acid-based technologies for viral gene quantification
- Knowledge of quantitative PCR and GMP
- Knowledge of virology and tissue culture assays

Methods Development Scientists

- PhD
- 3-5 years experience in nucleic acid-based quantitative methods and related instrumentation or biochemistry and related instrumentation
- Creative application of existing instruments to develop rapid and sensitive methods for live microorganisms or macromolecules in complex mixtures
- Knowledge of GLPs and assay development for DNA/RNA viruses

Process Development Scientists

- PhD
- Knowledge of aseptic techniques in mammalian cell culture and manipulation, TCID50 or other cell-based assays
- Familiarity with biological processes for viral vaccine development

For more information on these and other positions, visit our website at **www.aviron.com**

Join our growing team and make an impact on your life and the lives of others. If interested, please send resume, indicating position of interest, to: Aviron, Attn: Human Resources, Ref. SCI050799, 297 N. Bernardo Ave., Mountain View, CA 94043; fax 650/919-2491; email careers@aviron.com. Aviron welcomes candidates from diverse backgrounds. Principals only. NO PHONE CALLS, PLEASE. EOE.

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Scientists

Several exciting opportunities for scientists at the PhD level, with 0-3 years' experience, as well as at the Master's level with 8 years' experience. The three positions' responsibilities are as follows:

- Work with in vivo models of neurodegeneration, including stereotaxic surgery, behavioral testing, and drug administration. *Job code: 99-1251SCI*
- Develop methods for the structural analysis of recombinant proteins using HPLC, MALDI-ToF MS, and electrophoretic techniques. Proficiency in the analysis of proteins by HPLC, gel electrophoresis, and mass spectrometry desired. *Job code: 99-194SCI*
- Develop assays to test clinical trial samples. Requires experience in immunoassay development and the supervision of lab personnel. *Job code: 99-900SCI*

Biochemical Engineer

Provide technical engineering direction and support to manufacturing center; maintain cost-effective, scalable processes for new products and manage a small team. Requires PhD in Biochemical/Chemical Engineering and 3 years' experience; MS degree and 5 years' experience; or a BS degree and 8 years' experience. Knowledge of process engineering, process control, experimental design, protein purification, and cGMPs necessary. Project management experience a must.
Job Code: KC-99-557SCI

Associate Engineer/Bioengineering

Investigate cell physiology and physical parameters relevant to cell growth and the large-scale production of biologicals; perform process development and scale-up using small-scale cell culture devices and pilot-scale bioreactors. Requires MS degree in Biochemical Engineering; or BS in Chemical Engineering/Biological Science with a minimum of 2 years' experience. Knowledge of fermentation or cell culture, cell metabolism, basic bioreactor configurations, metabolic modeling, mass transfer, fluid dynamics, and basic process design necessary. Expertise in aseptic technique and analytical methods a must. Experience in a bioreactor operation is preferred.
Job Code: KC-99-ENG1SCI

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E-mail: jobs@genzyme.com

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Chair
Department of Radiology

The University of Pittsburgh is seeking a Chair for the Department of Radiology. The University of Pittsburgh has a strong history and commitment to clinical and academic excellence in the field of Radiology. The Department is comprised of approximately 60 clinical faculty and 20 research faculty providing radiologic services at four major teaching hospitals and three community hospitals. The major subspecialties of the Department are Abdominal Imaging, Chest Radiology, Musculoskeletal Radiology, Neuroradiology, Nuclear Medicine, Pediatric Radiology, Vascular and Interventional Radiology, and Women's Imaging. The Department has state of the art research sections in Magnetic Resonance Imaging with 3T and 1.5T dedicated magnets, Positron Emissions Tomography with cyclotron, 2 PET tomographs and one combined CT/PET tomograph, Radiological Imaging, and Informatics with a large PACS program.

The responsibilities of the Chair include the direction and administration of the professional, educational, research and outreach programs of the Department of Radiology. In addition, the Chair will oversee, coordinate, and encourage research within the Department. Candidates must have a distinguished record in Radiology, and possess strong leadership ability and management experience. Also, candidates must have a firm commitment to the education of fellows, residents and medical students, and qualify for the academic rank of Professor of Radiology.

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

Please send *curriculum vitae* and bibliography to the Chair of the Search Committee:

Leonard Firestone, M.D.
Chairman, Department of Anesthesiology/CCM
University of Pittsburgh Medical Center
A1305 Scaife Hall
Pittsburgh, PA 15261

Postdoctoral Fellowships

The UNC Lineberger Comprehensive Cancer Center of the University of North Carolina at Chapel Hill will have openings in 1999–2000 in its training program, now in its 24th year, for persons completing graduate studies to train with excellent investigators in basic research in tumor virology, molecular carcinogenesis, molecular therapeutics, cancer cell biology, genetics, tumor immunology, and research that interfaces with clinical and physical sciences. Training is available in DNA repair, replication, and mutagenesis; regulation of cellular proliferation and differentiation including growth factors, signal transduction pathways, and intercellular communication; molecular immunology; molecular genetics and epidemiology of cancer; and human disease models and gene therapy. Unique training resources and core facilities are supported by the NCI-designated UNC Lineberger Comprehensive Cancer Center.

Preceptors are: **Steven Bachenheimer, Albert Baldwin, Victoria Bautch, David Brenner, Keith Burridge, Sharon Campbell, Stephen Chaney, David Clemmons, Edward Collins, Marila Cordeiro-Stone, Channing Der, Robert Duronio, H. Shelton Earp, Jeffrey Frelinger, Frank French, Jack Griffith, Eng-Shang Huang, Clyde Hutchinson III, Kenneth Jacobson, Rudolph Juliano, David Kaufman, Shannon Kenney, Ryszard Kole, Steven Leadon, David Lee, Patricia Maness-Tidwell, William Marzluff, Beverly Mitchell, Joseph Pagano, Tom Petes, Mark Peifer, Nancy Raab-Traub, James Raleigh, Dale Ramsdeo, R. Jude Samulski, Aziz Sancar, Ronald Swanstorm, Lishan Su, Holden Thorp, Jenny Ting, Ronald Thurman, Michael Topal, Terry Van Dyke, Jean-Michel Vos, Kevin Weeks, Bernard Weissman, Elizabeth Wilson, and Yue Xiong.**

Candidates must be U.S. citizens or permanent residents. For an informational brochure or to apply (include curriculum vitae, three letters of recommendation, a statement of research interests, and graduate school records) write to:

Joseph S. Pagano, M.D.
CB# 7295
UNC Lineberger Comprehensive Cancer Center
School of Medicine
University of North Carolina at Chapel Hill
Chapel Hill, NC 27599-7295

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Molecular Biologist

We are looking for a motivated individual to join our Molecular Biology Group. The successful candidate will join a diverse group of scientists involved in gene cloning, family member cloning, gene expression analysis and generation of constructs for recombinant protein expression. The candidate should have a BS/MS degree or equivalent with at least 2 years of experience and a broad based knowledge of molecular biology procedures. Experience with cDNA library screening, PCR, and DNA sequence analysis is desirable.

Leads Discovery

Join a group on the forefront of technology development. We are currently seeking scientists to develop new technologies which will accelerate the pace of drug discovery.

BS/MS level scientists to participate in technology development for high throughput screening of combinatorial and discrete compound libraries. Previous work with signal transduction pathway proteins, kinases, or cell based assays is a plus. Preference will be given to candidates with experience in high throughput screening, assay automation, micro liquid handling, or low light imaging.

DuPont Pharmaceuticals Company can offer you an excellent compensation and benefits package. To be considered for the Molecular Biologist opportunity, please forward your resume to: DuPont Pharmaceuticals Company, P.O. Box 80336, Room 203 (TB-S599), Wilmington, DE 19880-0336. To apply for the Leads Discovery position, please forward your resume to: Human Resources-EG-KO, DuPont Pharmaceuticals Company, E400/2413, P.O. Box 80400, Wilmington, DE 19880-0400. An equal opportunity employer, M/F/D/V.

DUPONT

DuPont Pharmaceuticals Company

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Located in Sharon Hill, PA, Genovo, Inc. is a privately-held biotechnology company focused on the design, clinical development, and manufacture of gene-based therapeutic products for the treatment of human disease. We currently have a great opportunity for 2 experienced, motivated researchers to join our growing multidisciplinary R&D team.

Viral Vector Characterization/ Assay Development

In this key, senior level role, you will lead the development of assays for viral vector characterization for gene therapy products; direct the development, validation and routine performance of various analytical techniques for the quantitation and characterization of viral vectors, virus seed qualification, cell banking and product purity; and work closely with development groups to effectively characterize and assess the quality of viral vector candidates from bench and large scale production. The successful candidate will possess a Ph.D. in Molecular Biology, Virology or related field; 5+ years of industry experience; a solid understanding of traditional biological assays for virus quantitation, including TCID50, plaque and ELISA assays; familiarity with current analytical techniques for monitoring residuals from cell culture based processes; and hands-on experience developing and utilizing state-of-the-art, molecular-based, analytical methods for viruses and biological processes. (Job# SC0507-VVCAD)

Molecular Virologist

In this pivotal role, you will lead the development of vectors for adenovirus and adeno-associated viruses for gene therapy products; direct the design, construction and evaluation of viral vectors and complementing producer cell lines; and work closely with development groups to effectively characterize and transfer viral vector candidates from bench to large scale production. You will also perform vector and cell line engineering; develop screening methods to identify vector candidates; characterize vector candidates; and optimize vector production methods. The ideal candidate will possess a Ph.D. in Virology/Molecular Virology or related field; 5+ years of industry or academic experience; and hands-on experience with the molecular biology of adenoviruses and genetic engineering of cell lines. Experience with adeno-associated virus is desired. (Job# SC0507-MV)

Viral Vector Purification Process Development

In this crucial role, you will develop and characterize separation and purification methods for the large scale production of adenovirus and adeno-associated viral vectors. You will also develop purification/ separation methods for the removal of cell culture contaminants for viral vectors of high quality and purity, and work closely with development groups to efficiently scale-up viral vector candidates from bench processes to commercially viable production processes. Candidates must possess an MS in Biochemistry, Protein Chemistry, Virology or related field with 5 years of industry experience, or a BS with 10 years of experience. The position requires expertise with filtration and chromatography operations, and a solid understanding of large scale separations and purification techniques for viruses. (SC0507-VVPPD)

We offer competitive salaries & benefits, stock options, and the opportunity to make significant scientific contributions. To apply, please submit CV, salary history and three references to: **Genovo, Inc. Human Resources, Attn: (Job#_____), Elmwood Court Two, 512 Elmwood Ave., Sharon Hill, PA 19079; fax: (610) 522-8548; email: resumes@genovo.com.** EOE

GENOVO

Delivering a New Generation of Pharmaceutical Products

DIRECTOR, GEOPHYSICAL INSTITUTE, UNIVERSITY OF ALASKA FAIRBANKS

Applications and nominations are invited for the position of Director of the Geophysical Institute. The new Director will replace Dr. Syun Akasofu who will resign from the directorship to become the Founding Director of the International Arctic Research Center. The Director provides scientific leadership and has administrative and budgetary responsibility for the research programs of the Geophysical Institute, as well as for major research facilities operated by the Institute such as the Poker Flat Research Range, Alaska SAR Facility and Alaska Volcano Observatory. The research programs at the Institute include solar-terrestrial physics and aeronomy, atmospheric sciences, glaciology, geology and solid earth geophysics. Graduate studies leading to the M.S. and Ph. D. degrees in all of these fields are conducted through the College of Science, Engineering and Mathematics, with thesis research projects that may be carried out within and supported by the Geophysical Institute. The Institute has 96 faculty and research staff, 175 technical and administrative staff and 76 students. Further information on the Institute can be obtained through its web address at: http://www.gi.alaska.edu/

Applicants should be distinguished senior scientists with a doctoral degree or commensurate experience. Selection criteria will include well documented evidence of substantial contributions to the candidate's field of science in a discipline represented in or related to the research programs of the Institute; well documented evidence of innovative and successful leadership of substantial and major scientific research programs, including the procurement of funds to support such; evidence of ability to communicate effectively with scientific peers, sponsors of research, support staff, administrators, legislators and the general public; and administrative/managerial/fiscal experience in the planning and supervision of major research projects and operational facilities. Familiarity with the U.S. Federal agencies (e.g. NASA, NSF, NOAA, DOI, etc.) funding research and instruction in the polar regions is essential.

The Search Committee will begin its evaluation of applicants on 1 July. The position will remain open until filled. The appointment of the Director will be made by the Regents of the University upon the recommendation of the President of the University, with the approval of the President of the National Academy of Sciences, according to the Act of Congress which established the Geophysical Institute in 1946. The appointment normally carries with it a tenured full professorship in appropriate academic department(s) of the University.

Please send a letter of interest, a resume and the names of at least three references to:

Dr. Gunter Weller
Chairman, Search Committee
Geophysical Institute
University of Alaska Fairbanks,
Fairbanks, AK 99775-7320
or contact Dr. Weller at (907) 474 7371, Fax. 907 474 7290 or e-mail at gunter@gi.alaska.edu for further information.

The University of Alaska Fairbanks is an equal opportunity/affirmative action employer and educational institution.
Your application for employment with the University of Alaska is subject to public disclosure under the Alaska Public Records Act.

Vita Per
HHMI
Scientiam

HOWARD HUGHES MEDICAL INSTITUTE

The Howard Hughes Medical Institute conducts biomedical research in the areas of cell biology, genetics, immunology, neuroscience and structural biology at over seventy locations around the United States. HHMI regularly has positions open for research and administrative personnel.

Laboratory Positions:

- Postdoctoral Fellowships
- Research Specialists/Technicians
- Research Secretaries

Administrative Positions:

- Managers
- Administrative Assistants
- Purchasing Coordinators
- Receiving Clerks

Institute employees enjoy competitive salaries and an excellent benefits package. HHMI is an equal opportunity employer. Please visit our website at **www.hhmi.org/jobs** for a listing of available positions.

OHIO UNIVERSITY
1804
TM

PRINCIPAL INVESTIGATOR, MAMMALIAN GENETICS
EDISON BIOTECHNOLOGY INSTITUTE

The Edison Biotechnology Institute, Ohio University, invites applications for a senior scientist to join a unique interdisciplinary research environment. We seek an outstanding, innovative and creative scientist who utilizes modern tools and approaches to investigate genetically based human health issues. Our current strengths are in molecular, cellular, and developmental biology emphasizing transgenic and gene disruption technology, disease models and gene discovery/gene function. The successful candidate must be capable of maintaining a vigorous, creative, and independent, externally funded research program.

The Institute has a strong commitment to excellence in research, scholarship, and teaching of graduate and undergraduate students. A blend of both academic and industrial collaborations, a focus on entrepreneurship and the development of new technologies, combined with a modern facility, makes this a very unique research environment.

Applicants must have a Ph.D. or M.D. a significant history of publication and funding, and exhibit interpersonal skills that will build cooperation across departments and organizations. The position includes a faculty appointment in the Department of Chemistry and Biochemistry. Tenure will be considered for senior candidates. The appointment may start as early as July 1, 1999.

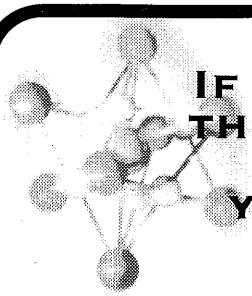
To apply, please send a curriculum vitae, a brief statement of current and future research plans and the names and addresses of at least three references to:

David C. Wight, Ph.D., Director
Edison Biotechnology Institute
Ohio University
Athens, OH 45701

To assist with the search, the Institute has engaged Search Masters International, an executive search firm. Inquiries may also be directed to David G. Jensen, c/o SMI, 500 Foothills South, Suite 2, Sedona, AZ 86336, (520) 282-5881 fax or email to SMI@sedona.net.

For full consideration please apply by May 31, 1999. Position will remain open until filled. Additional information about the Institute can be found at http://www.ohiou.edu/biotech/

Ohio University is an Equal Opportunity/Affirmative Action Employer.



IF YOU'RE GOING TO MAKE THE NEXT BREAKTHROUGH IN BIOTECHNOLOGY, YOU'RE GOING TO NEED A LOT OF PROTEIN.

ZymoGenetics, Inc. is a biotechnology company located in Seattle's historic Lake Union Steam Plant. As a subsidiary of NOVO NORDISK, the world's largest producer of industrial enzymes, ZymoGenetic's mission is to identify protein therapeutic opportunities and to take selected projects as far as clinical proof of concept studies. We offer intellectual challenge, state-of-the-art facilities and a generous benefits package. We are currently seeking qualified candidates for the following Seattle positions:

SCIENTIST/SR. SCIENTIST #37N299

Our Stem Cell Biology group is focused on the discovery of unique cytokines and cytokine receptors which play a role in tissue regeneration from pluripotent progenitor cells. With a current program focus on hematopoiesis and mesenchymal stem cell biology, we now seek to broaden our efforts, including a focus on embryonic stem (ES) cells; specifically to exploit their in-vitro differentiation capacity for the discovery of novel protein agents which control the lineage commitments of the progenitors in embryoid bodies. The ideal candidate will have a strong background in Stem Cell biology, together with an appreciation for regulation of progenitor cell differentiation by cytokine-signaling pathways. Also helpful would be familiarity with the practical aspects of protein therapeutic drug discovery, specifically including some background in screening and identification of genes by function. The candidate will have a minimum of 2 + years experience in stem cell biology, together with strong communication skills and a desire to be actively involved in research at the bench. Educational requirements: Ph.D.

SCIENTIST/SR. SCIENTIST #35N199

The Experimental Pathology Group is in search of an in vivo biologist to join a team testing novel proteins in animals to determine their functions and possible therapeutic utility. Responsibilities include design, performance and analysis of animal experiments to identify biologic activities of protein agents as well as identification and use of appropriate animal models for evaluation of therapeutic potential. The successful candidate will have strong written and verbal communication skills. Versatility and flexibility are essential. Must be able to work in multidisciplinary teams. Expertise in one or more of the following areas useful: thrombosis/vascular injury, evaluation of Transgenic and knockout phenotypes, inflammation, angiogenesis, and/or development biology. Educational requirements: Ph.D., DVM, or MD and 2-6 years of academic or industrial experience in physiology, pharmacology, or pathology.

SCIENTIST/SR. SCIENTIST #35N599

We are seeking a pathologist to join our Experimental Pathology group at the Scientist/Sr. Scientist level. The successful candidate will aid in the design and microscopic evaluation of animal studies for the elucidation of the biology and therapeutic uses of novel proteins. Strong interpersonal, verbal and written communication skills are required. Must have a DVM or equivalent degree, a Ph.D. in pathology or related field and experience in rodent pathology, including the pathology of genetically engineered mice. Board certification and experience in immunohistochemistry are highly desirable.

SCIENTIST/SR. SCIENTIST #36N199

We are seeking an innovative scientist to contribute to the establishment of biological function and mechanism of action of bioinformatics derived novel protein ligands. The successful candidate will have a broad understanding of cell biology and physiology as well as extensive experience in the evaluation of diverse biological activities using in vitro assays. In this position, you will be responsible for identification of new assay technologies. Knowledge of cytokines and growth factors, their receptors, and signal transduction pathways is required. In addition to experience with cell-based functional assays, experience in one or more of the following areas is a plus: primary cell culture, receptor ligand binding, CCD based fluorescent imaging assays (Ca++, membrane potential, GFP). The position requires a Ph.D. in cell biology, endocrinology, physiology or related field, 5+ years of relevant experience and good verbal and written communications skills.

Job description and salary are commensurate upon experience. For confidential consideration, forward your resume and cover letter noting Job Reference # to: ZymoGenetics, Inc., Attn: Human Resources, 1201 Eastlake Avenue East, Seattle, WA 98102. Fax: (206) 442-6658. E-mail: jobs@zgi.com. Equal Opportunity Employer.

ZYMOGENETICS

Regeneron Pharmaceuticals, Inc.

is on the forefront of cutting edge science and technology leading to potential novel therapeutics in areas such as neurological disorders, oncology, inflammation, angiogenesis, and bone and muscular diseases. Our substantial and continued growth is enhanced by the presence on our staff of internationally recognized scientists and by significant collaborations with other prestigious pharmaceutical corporations. At Regeneron, we believe that if you provide outstanding people with the resources they need and a creative, energetic environment, they will achieve breakthroughs that will benefit the world.

Turning **RESEARCH** *into* **SOLUTIONS**

Challenge Yourself While We Challenge Your Career!

SCIENTISTS

Career opportunities for Ph.D. level candidates in the following areas:

Angiogenesis - In vivo/In vitro: The preferred candidate will have experience in some of the following areas: endothelial & smooth muscle cell culture, in vitro models (network formation, chemotaxis, migration, survival) & in vivo models (wound healing, tumor, matrigel and CAM assays, ischemic models). Experience with adenovirus & retrovirus a plus. ***Job Code: ANG-SCI***

Cellular/Molecular: The preferred candidate will have a strong background in cellular and molecular biology. Experience with tissue isolation, culture of primary cells and an expertise in extracellular matrix signal transduction and cell/cell interactions is desirable. Two years postdoctoral experience required. ***Job Code: C/M-SCI***

Protein Science: Will have a strong background in cell or molecular biology and experience in recombinant protein expression in eukaryotic or prokaryotic systems. Experience in stable CHO cell line development, protein purification and the study of structure/function relationships a plus. ***Job Code: PSC-SCI***

Scientist in Pharmacology: Participate in the development of in-vivo models of disease, set up analytical assays, and evaluation of drug candidates. Exp in in-vivo work and training in biochemical and analytical assay development (ELISA, RIA, HPLC, electrophoresis) are required. Applicant should have a Ph.D. degree with at least two years post-doctoral training in relevant fields, especially obesity, diabetes, asthma, and inflammation. ***Job Code: VW-SCI***

POSTDOCTORAL FELLOWSHIPS

BioMolecular Screening: Fellowship will focus on cytokine/receptor interactions and intracellular signaling. Experience in receptor/ligand interactions, signaling, mammalian cell culture, enzymology and yeast assay technologies a plus. ***Job Code: BMS-SCI***

Molecular Biology: Project will focus on the expression and characterization of novel proteins. Experience with mammalian cell culture techniques and transfection desirable. Ph.D. in molecular biology or relevant field required. ***Job Code: MBI-SCI***

RESEARCH ASSOCIATES

Several positions are available for BS/MS level candidates in the following areas:

Biochemical Assays: Position will be responsible for tissue sample preparation and biochemical analysis, including ELISA, Western, SDS-PAGE and phosphorylation blots. Experience in membrane isolation a plus. ***Job Code: BAS-SCI***

Assay Development: Several positions are available in the areas of cellular, receptor binding, and enzyme assay development, optimization and validation. Experience in one or more of the following areas is required: immunoassays, cell culture techniques, receptor-ligand interactions and enzymology. ***Job Code: ADE-SCI***

Molecular Biology: Several positions are available for candidates with experience in the preparation of expression constructs, cloning and Northern and Southern analysis. ***Job Code: MOL-SCI***

Formulation: Will have exp in formulation and analytical method development, particularly using HPLC and electrophoresis. ***Job Code: FOR-SCI***

Pharmacokinetics: Will conduct preclinical PK and ADME studies. Experience in one or more of the following techniques is required: HPLC, ELISA, RIA, gel electrophoresis. In vivo dosing experience is desirable. ***Job Code: PHA-SCI***

Protein Science: Several positions are available in the areas of protein production, purification and analysis. Experience in one or more of the following techniques is required: HPLC, SDS-PAGE, Western blot, and CHO recombinant protein production. ***Job Code: PRS-SCI***

TECHNOLOGY TRANSFER

Administrator: Will play an important role in Regeneron's progressive Technology Transfer group. Primary duties include the administration of scientific collaborations with outside investigators, including drafting and negotiating Material Transfer Agreements and CRADAs. Qualified candidates will have an MS in molecular or cell biology plus lab exp. One to three years experience in Technology Transfer desirable. ***Job Code: TTA-SCI***

Regeneron is located on a campus-like corporate park and offers an outstanding benefits package including medical, dental, vision, Rx, stock options, 401(k) plan with match, long term disability, life insurance, relocation and paid holidays, vacation and personal days. Please visit our website at ***www.regeneron.com*** *for more information. For consideration, please submit a cover letter indicating position of interest, along with a resume and salary requirements to:*

REGENERON Pharmaceuticals, Inc.
Human Resources, (specify Job Code)
777 Old Saw Mill River Road, Tarrytown, NY 10591
Fax: (914) 345-7790 • e-mail: jobs@regpha.com EOE M/F/D/V
Regeneron...we thrive on unique challenges. You'll thrive with us.

Director of Molecular Analysis Facility

The University of Iowa College of Medicine is seeking a Director of the Molecular Analysis Facility. This facility supports basic and applied research in the characterization of proteins, peptides and other biomolecules. The director will provide leadership in establishing a facility that is capable of delineating primary structure and assessing the nature of post-translational modifications of proteins and peptides employing multiple methods of analysis including "soft" ionization mass spectrometry techniques, Edman degradation employing a gas phase sequencer, 2-D gel electrophoresis, electroblotting to PVDF membranes and *in situ* protease digestion on nitrocellulose. The facility is also used for training of graduate students, research assistants, and postdoctoral scholars.

Required Qualifications: Ph.D. or professional equivalent. Must understand and be able to apply recent advances in mass spectrometry to the analysis of proteins. Must be able to develop a facility that will take a comprehensive chemical and spectroscopic approach to analysis of biological samples and to become proficient in new technology as it becomes available. Interest and ability in managing the facility, maintaining instruments and training graduate students and postdoctoral fellows in approaches and techniques of molecular analysis is also required. Desirable Qualifications: A Ph.D. chemist is preferred with prior experience in the field of protein chemistry along with working knowledge of ESI/MS and Maldi-TOF/MS. Prior supervisory experience.

A detailed job description can be viewed at http://www.medicine.uiowa.edu/research/MAFDirector To be considered for this position send letter of application and resume to: Jeanne McCabe, COM Research Administrator, 224 CMAB, The University of Iowa, Iowa City, IA 52242, or jeanne-mccabe@uiowa.edu. The University of Iowa is an Equal Opportunity Affirmative Action Employer. Women and minorities are strongly encouraged to apply.

Clinical Research Fellows

Cato Research Ltd. (CRL) is a contract research organization in **Research Triangle Park, North Carolina** which engages in pharmaceutical drug development and FDA registration on behalf of clients in the pharmaceutical and biotechnology industries. We have exciting non-laboratory opportunities for self-starters with scientific backgrounds who want to learn and grow in a creative environment. These individuals will receive training in the scientific, regulatory, medical and financial aspects of pharmaceutical drug development.

The ideal candidate will possess:

- ▼ Ph.D. in Biological Sciences (toxicology, pharmacokinetics, cardiology, blood products, gastrology, endocrinology, immunology or physiology preferred).
- ▼ Excellent written and verbal communication skills.
- ▼ Initiative and strong interpersonal skills.
- ▼ Ability for critical and analytical thinking.

Cato Research Ltd. offers a complete salary and benefits package, and a creative, family-friendly environment in which to grow. For consideration, please send your resume, cover letter and writing sample to: **Job 900, Cato Research Ltd., 4364 S. Alston Ave., Suite 201, Durham, NC 27713-2280.** No phone calls please. EOE. Please visit our website at www.cato.com

CATO RESEARCH

POSTDOCTORAL RESEARCH

Position available to study signal transduction pathways involved in the activation and nuclear localization of cytosotic phospholipase A2 with Dr. Christina C. Leslie, Ph.D., Deparment of Pediatrics. Candidate should have recently obtained Ph.D. and have molecular biology experience. Start ASAP.

Please send c.v and two references letters to:
National Jewish Medical
and Research Center
1400 Jackson St., G110
Denver, CO 80206
Fax: (303) 398-1775
e-mail to: MccollumL@njc.org

NATIONAL JEWISH
Medical and Research Center

The National Jewish Medical and Research Center is an Affirmative Action/Equal Opportunity employer

The University of Michigan School of Medicine, Section of Urology has been awarded a National Institutes of Health Training Grant in the Urologic Sciences. The following mentors are part of this program:

Mentor	Area of Research Interest
Kenneth J. Pienta, M.D.	Understanding the mechanisms underlying prostate cancer metastasis
Alfred E. Chang, M.D.	The development of adoptive immunotherapy strategies for the treatment of renal cell cancer
Michael F. Clarke, M.D.	The genetic control of apoptosis
Kathleen A. Cooney, M.D.	The molecular genetics of sporadic and familial prostate cancer
Mark L. Day, Ph.D.	Mechanisms of apoptotic signal transduction
Jack Dixon, Ph.D.	Mechanisms of phosphatase signal transduction
Eric J. Fearon, M.D., Ph.D.	Genetic aberrations in bladder cancer and the development of diagnostic markers for bladder cancer
Paul Hollenberg, Ph.D.	The control of P450 enzymes in health and disease
Michael Imperiale, Ph.D.	The role of BK virus, in the etiology of prostate cancer
Evan Keller, D.V.M., Ph.D.	The role of cytokines and androgen receptor activity in the development of androgen-independent prostate cancer and the biology of prostate cancer bone metastases
Michael Long, Ph.D.	Understanding the mechanisms underlying the acquisition of the aneuploid phenotype
Jill A. Macoska, Ph.D.	The role of Chromosome 8 alterations in prostate tumorigenesis
Gabriel Nunez, M.D.	Genetics and biochemistry of apoptosis
Dana Ohl, M.D.	Understanding the basis of male infertility
John Park, M.D.	The role of bladder and renal prostaglandin synthesis regulation via cyclooxygenase pathways in the setting of bladder obstruction, inflammation and development
Diane Robins, Ph.D.	Molecular control of the androgen receptor
Mark Rubin, M.D.	Identification of biomarkers for prostate carcinoma
Martin Sanda, M.D.	Development of gene therapy strategies for prostate and bladder cancer
David Schottenfeld, M.D.	Epidemiology of prostate cancer
Jeremy Taylor, Ph.D.	Development of statistical methodology
Stuart Wolf, M.D.	Development of novel tissue reconstruction strategies for the urinary tract

Ph.D. and M.D. postdoctoral candidates interested in pursuing a career in academic urology should send a cover letter and C.V. to the attention of **Marty Davis-Merritts, 1500 E. Medical Center Drive, Room 7303 CCGC, Ann Arbor, MI 48109-0946.** Positions start July 1, 1999. Candidates must be U.S. citizens.

University of California, Irvine
College of Medicine - Department of Radiation Oncology
Post-Doctoral Researcher

Applications are invited for an immediately available position as a post-doctoral researcher to work on a collaborative project between the laboratories of Professor J. Leslie Redpath in the College of Medicine, Department of Radiation Oncology and Professor Eric J. Stanbridge in the Department of Microbiology and Molecular Genetics at UC, Irvine. The research topic is the analysis of cell cycle checkpoints in irradiated normal and tumorigenic human cells. The focus will be on the molecular basis for the differential response of such cells and the implications of this differential response for the fate of the irradiated normal and tumor cells. UC, Irvine has a stimulating environment of cancer-related research through its NCI-designated Comprehensive Cancer Center programs and shared resources.

The University of California, Irvine, is an equal opportunity employer, committed to excellence through diversity. Applicants should send curriculum vitae, summary of research experience and the names of three referees to:

J. Leslie Redpath, Ph.D.
Department of Radiation Oncology
B148 Med Sci, Zot Code 2695
University of California, Irvine
Irvine, CA 92697
Tel: (949) 824-7395
Fax: (949) 824-3566
Email: jlredpat@uci.edu

UCI

Closing date: Until Filled, Minimum Salary: $29,112

RESEARCH and DEVELOPMENT SCIENTISTS

Avigen, Inc., a leader in the development of gene therapy based on adeno-associated virus (AAV) for the treatment of inherited & acquired diseases, has a great opportunity for a number of hands-on positions to join our research team in Alameda, Ca.

RESEARCH SCIENTISTS
We have opportunities for 1–2 molecular virologists (preferably with backgrounds in herpes or adenovirus biology), or cell biologists, to design and implement new methods for AAV vector production. Members of the group will also be involved in the development of new viral vector systems. Candidates must have a Ph.D. or MD and at least 3 years of postdoctoral experience in a relevant field.

DEVELOPMENT SCIENTIST
Position available for Development and Analytical Scientist, who will be responsible for process and assay development in the production of recombinant AAV vectors for clinical trials. Candidates must have a Ph.D. and at least 2 years experience in the relevant areas of purification and assay development. Experience with live virus production, GMP and small/large scale mammalian cell culture a plus.

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

To apply, email/send/fax resume, specifying position of interest, to: Avigen, Inc., Human Resources, 1201 Harbor Bay Parkway, Suite 1000, Alameda, CA 94502; e-mail: sdelph@avigen.com, fax: (510) 748-7155. EOE

AVIGEN

Syntonix PHARMACEUTICALS, INC.

Join a Dynamic New Company

Syntonix is a new, privately held biotech company engaged in basic research and development activities involving the delivery of therapeutic proteins across epithelial barriers for the treatment of diseases in several therapeutic areas. If you have an entrepreneurial spirit and a desire to work as part of a small, interdisciplinary team, this is an ideal opportunity to grow with the company. We are currently seeking highly-motivated Ph.D. level Senior Scientists and BS/MS Research Associates for the following positions:

Molecular Biologists

Scientists possessing an excellent working knowledge of all current molecular biology techniques including molecular cloning, construction of novel vectors for bacterial, mammalian and insect cell protein expression, DNA sequencing, mutagenesis, measurement of gene expression and PCR. Familiarity with in situ hybridization is a plus. **Job Code MB**

Cell Biologists

Experience with mammalian cell culture as well as in vitro cell-based and biochemical assays including ELISA, transcytosis assays, cell proliferation assays and receptor binding assays to assess the pharmacology of novel therapeutics. Responsibilities will include the development of high throughput assays for the selection of novel ligands for receptor binding. **Job Code CB**

Protein Biochemists

Ability to purify recombinant proteins from heterologous expression systems using a variety of chromatographic techniques including FPLC, HPLC, affinity and conventional chromatography. Experience with scale-up of purification protocols for medium to large-scale production of biopharmaceuticals is highly desirable. Experience with the characterization of protein:protein interactions is a plus. **Job Code PB**

All Ph.D. positions require a degree in Molecular Biology, Cell Biology, Biochemistry, Pharmacology or a closely-related discipline and 1-5 years of relevant experience. BS/MS positions require a degree in a relevant field of biology with 1 or more years of experience

All candidates interested in expanding their career and becoming an integral team member are invited to submit a detailed resume and letter indicating job code to: Syntonix Pharmaceuticals, Inc., HR Dept. SC, Job Code __, 65 Cummings Park, Woburn, MA 01801; Fax: 781/ 368-1061; email: syntonixjobs@syntnx.com EOE

For an interesting look, please find us at: www.syntnx.com

Basic Scientist Faculty Position Reproductive Immunology University of Utah, Department of Obstetrics and Gynecology

We are seeking a Ph.D. as a full-time faculty member and Director of laboratory for our Reproductive Immunology Research Program. This is an opportunity to be involved with well-established clinician scientists in a superb program investigating potential autoimmune, alloimmune, immunogenetic aspects of recurrent pregnancy loss as well as other areas of maternal-fetal immunology and pregnancy problems. The candidate should be trained in and have demonstrated ability in contemporary molecular techniques and have an interest in collaborative research. Rank and track are open, depending upon qualifications. Address inquiries and send current curriculum vitae to:

James R. Scott, M.D.
(Phone 801-581-8995) or
D. Ware Branch
(Phone 801-581-7931)
Department of Obstetrics and Gynecology
University of Utah School of Medicine
50 North Medical Drive, Room 2B200
Salt Lake City, Utah 84132

The University of Utah is an Equal Opportunity Affirmative Action Employer and encourages applications from women and minorities.

The University of New Orleans and the Audubon Institute announce an Endowed Chair in Aquatic Resource Conservation

The Audubon Institute

The University of New Orleans invites nominations and applications for the Greater New Orleans Foundation Endowed Chair in Aquatic Resource Conservation. The successful candidate will have a demonstrated record of scientific achievement in the study and conservation of aquatic resources.

The Endowed chair will establish a dynamic research program in aquatic resource conservation at any biological level from population to ecosystem and involving any relevant taxonomic group. The Chair will be appointed to the faculty in the Department of Biological Sciences at the University of New Orleans, will participate in teaching and the direction of graduate students, and will assume a leadership role in the Ph. D. program in Conservation Biology. The Chair will conduct research at the nearby Audubon Institute Center for Research of Endangered Species (AICRES) and at UNO.

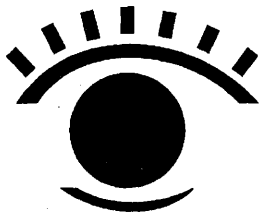
Candidates should have credentials appropriate for appointment at the rank of Professor, but exceptional candidates at the rank of Associate Professor will also be considered. **For more information, see http://www.uno.edu/~bios.**

Send nominations or applications including: curriculum vita, statement of research interests, and contact information for five references to:

Endowed Chair Search Committee
Department of Biological Sciences
University of New Orleans
New Orleans, LA 70148

Review of candidates will begin July 1, 1999 and will continue until the position is filled.

The University of New Orleans is an equal opportunity/affirmative action employer.



Don't blink.

Opportunity can pass you by in an instant. Let's make it happen. Together.

Life Science Strategy Consultant

Ernst & Young LLP Consulting Services is currently seeking a management consultant to join our growing Strategy Consulting practice focused exclusively on emerging and operating biotechnology and medical device companies. Consulting Services include strategic planning, financial modeling, product launch strategy, research and development portfolio management, and merger and acquisition support. In addition to managing consulting engagements, a substantial business development role will be expected.

Requires a BS in a Life Science (e.g., Molecular Biology, Biochemistry, Genetics, Immunology, Virology), with 5+ years of work experience, including 3+ years as a consultant. Demonstrated expertise in biotechnology and/or medical devices is essential, as are superior project management and communication skills. Must have experience defining, designing and delivering strategic business solutions, as well as a background in services-oriented sales and account management in the entreprenurial marketplace. Extensive travel required. An advanced degree with an emphasis on strategy or finance is preferred. This position will be based out of our Palo Alto, CA office.

Ernst & Young was named one of the 100 Best Companies To Work For in a survey published by FORTUNE® magazine, and offers a dynamic work environment, a competitive salary and a comprehensive benefits package. For immediate consideration, please forward your resume and salary requirements to: **Ernst & Young LLP, Dept. 15487, 113 Terrace Hall Avenue, Burlington, MA 01803; Fax Toll Free to: 1-877-4EY-JOBS; or e-mail: dept.15487@eycareers.com.** Visit our Web site at www.ey.com. Ernst & Young LLP, an equal opportunity employer, values the diversity of our work force and the knowledge of our people.

ERNST & YOUNG
FROM THOUGHT TO FINISH.™

SCIENTIFIC DIRECTOR

The Juvenile Diabetes Foundation International (JDFI), a major non-profit institution whose goal is to fund research aimed at finding a cure for diabetes and its complications (more than $55 million in 1999), is seeking a Scientific Director to assist in planning and directing its research program. The Scientific Director will help identify future research priorities as well as direct evaluation of ongoing research in basic and clinical areas. Will consult with governmental, private, and industrial organizations to identify and meet research needs.

Seven years clinical and/or basic science expertise required. MD, Ph.D. or equivalent degree required. Must have specialized training or experience in diabetes related research or relevant field, such as immunology, molecular biology, biochemistry, or molecular genetics. Strong written and verbal communication skills desired. Some travel required.

Please forward your resume along with salary requirements to: **SD, Carmel Simone, Director of Human Resources, Juvenile Diabetes Foundation International, 120 Wall Street, 19th floor, New York, NY 10005-4001 or Fax (212) 785-9595.**

EOE M/F/D/V

élan pharmaceuticals

Are You Ready For Greater Professional Challenges?

Meet representatives of Elan Pharmaceuticals, a worldwide specialty pharmaceutical company focused on the discovery, development and commercialization of neurology, acute care and pain management products. We have many positions, including senior management levels in the following functional areas:

- **Research**
- **Validation**
- **Clin/Reg**
- **Business Development**
- **Manufacturing**
- **Tech Operations**
- **Sales and Marketing**
- **Legal**
- **Project Management**
- **Engineering**

We will be attending two events in May and we invite you to come to our booth to learn about our job opportunities.

ASBMB Joint Meeting
May 17-18 only, San Francisco

BIO '99
May 16, Seattle

If you can't meet us at the shows, please forward your resume/c.v. and letter to: Elan Pharmaceuticals, Attn: Staffing, 800 Gateway Blvd., So. San Francisco, CA 94080. Email: careers@elanpharma.com; Fax: (650) 614-1061. EOE.

Purdue Biopharma L.P.

Purdue Biopharma L.P. is establishing a research and development facility located in Princeton, NJ where 60+ scientists will be required to develop synthetic antibody therapeutics and recombinant protein vaccines. Positions will include discovery research, prototype drug evaluation, and production of cGMP products for clinical trials. To staff this effort, Purdue has immediate openings in the following areas:

The next phase of scientific evolution

SCIENTISTS

Head, Antibody & Vaccine Discovery Research

The successful candidate will have 10 or more years of relevant experience in immunotherapeutics research and be responsible for target identification, validation, and drug evaluation for our synthetic antibody and vaccine programs. Experience managing teams of Scientists is strongly desired. Candidates holding M.D. or Ph.D. degrees, or with highly relevant academic experience are highly encouraged to apply.

Head, Protein Production

The successful candidate will have 5-10 years of industry experience developing small and large-scale protein production methods. Extensive knowledge of transient expression and stable expression strategies is important, as is knowledge and experience with the regulatory aspects of cell banking and cGMP production.

Head, Protein Purification

The successful candidate will have 5-10 years of industry experience developing small and large-scale protein purification methods, and have extensive knowledge of regulatory requirements and cGMP production.

Laboratory Heads

Successful candidates will have at least 2 years of post-doctoral experience in one of the areas listed above.

Research Associates

Successful candidates will hold B.A., B.S., or M.S. degrees and have relevant experience in one of the areas listed above.

CHEMISTS

Combinatorial Chemists

Requires a BS, MS or Ph.D. in synthetic organic chemistry with 3+ years of experience including expertise with the latest solid-and-solution-phase synthetic techniques as well as applied analytical methods. Familiarity with electronic database systems and on-line literature tools is important.

Synthetic Chemists

Requires a BS, MS or Ph.D. in synthetic organic chemistry with 3+ years of broad range experience covering design, synthesis, purification and analytical characterization of heterocyclic molecules.

Visit our website at www.purduebiopharma.com

For immediate consideration, qualified applicants should mail or fax resumes indicating position of interest and salary requirements, to: **Associate Director, Human Resources Services, Dept-SM, Purdue, 100 Connecticut Avenue, Norwalk, CT 06850; Fax: (203) 851-5300.** Corporate standards require drug testing and background investigation. We are an Equal Opportunity Employer committed to a diverse workplace.

PURDUE™

Science Into Practice

POSITIONS OPEN

ASSISTANT DEAN
COLLEGE OF LETTERS AND SCIENCE
UNIVERSITY OF WISCONSIN–MADISON

The College of Letters and Sciences and the office of University-Industry Relations are seeking nominations and applications for a full-time Assistant Dean position. The incumbent will serve as Assistant Dean working with the College of Letters and Science faculty and staff on technology transfer efforts at the UW-Madison.

Degree and specialization: Ph.D. in a science related field is required with demonstrated research ability, so as to ensure an understanding of the research process and technologies originating from faculty, and to establish credibility with faculty and outside contacts.

Experience: At least 10 years of experience is required to include a combination of management, marketing, technology transfer, and research activities. Experience in patenting and/or copyrights is desirable. Both business and academic experience is necessary, as well as an appreciation of the research activities in areas covered by the College of Letters and Science. Appreciation for the mission and priorities of universities as institutions of higher learning as distinct from industrial research laboratories is essential.

Unless confidentiality is requested in writing, information regarding applicants and nominees must be released upon request. Finalists cannot be guaranteed confidentiality. Deadline date for receipt of application: June 30, 1999.

For full consideration, send a cover letter, complete résumé, and the names and addresses of at least three references to:

Dr. Steven C. Price, Director
University-Industry Relations (UIR)
University of Wisconsin–Madison
Room 1215 WARF Building
610 Walnut Street
Madison, WI 53705
Telephone: 608-263-2840

The University of Wisconsin is an Equal Opportunity and Affirmative Action Employer.

BASIC SCIENCE
NEUROSCIENCE/NEUROONCOLOGY

OPEN RANK FACULTY POSITION. The Division of Neurosurgery, Department of Surgery, Beth Israel Deaconess Medical Center seeks to fill one research faculty position. Academic rank commensurate with experience. Candidates must have a Ph.D., M.D. or the equivalent, a minimum of two to three years of postdoctoral training, and evidence of the ability to establish and continue an extramurally funded research program. Candidates should have extensive training and research experience in molecular biology and cell biology. Preference will be given to candidates with prior experience in brain tumor research. To apply, send a letter of application indicating the rank you are applying for along with curriculum vitae, a summary of research interest, and the names of at least three individuals from whom references can be obtained to: **Julian Wu, M.D., Neurooncology Research Search Committee, Division of Neurosurgery, Department of Surgery, Beth Israel Deaconess Medical Center, 110 Francis Street, Suite 3-B, Boston, MA 02215. E-mail: jwu3@bidmc.harvard.edu.** *Beth Israel Deaconess Medical Center is an Equal Opportunity Employer that values the strength diversity brings to the workplace.*

University of Florida seeks a **CLINICAL ASSISTANT PROFESSOR** in the Department of Medicine, Division of Infectious Disease. M.D. degree, Board-certified/Board-eligible in infectious disease. A full-time non–tenure-track position with the responsibilities of patient care in the inpatient and outpatient clinics. Epidemiologist for Shands Hospital and advise and instruct Residents and medical students. Salary and benefits commensurate with experience. Recruiting deadline June 17, 1999. Anticipated starting date July 1, 1999. Please reply with curriculum vitae and a cover letter to: **Minh-Hong Nguyen, M.D., Department of Medicine Box 100277 JHMHC, Gainesville, FL 32610.** *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

BARBARA ANN
KARMANOS
CANCER INSTITUTE

TRANSGENIC MOUSE BIOLOGIST
FACULTY POSITION

The Barbara Ann Karmanos Cancer Institute seeks outstanding basic, clinical, and translational cancer researchers for faculty positions at Wayne State University. We seek outstanding candidates at the levels of **ASSISTANT, ASSOCIATE** and **FULL PROFESSOR**, with a M.D. and/or Ph.D. degree and a strong record of academic achievement in basic cancer research employing transgenic or knockout mice to provide genetic models of human cancer.

Wayne State University and The Detroit Medical Center are the academic and clinical affiliates of the Barbara Ann Karmanos Cancer Institute, a unique, integrated system of research, patient care, and education, dedicated to the prevention, early detection, treatment, and eventual eradication of cancer.

Positions are available in programs focusing on breast cancer; cancer genetics; cancer prevention; developmental therapeutics; and prostate cancer.

Please send letters of application accompanied by curriculum vitae and names of three references to:

Caryn Volpe
Academic Affairs and Research Administration
Barbara Ann Karmanos Cancer Institute
4100 John R, 2nd Floor
Detroit, MI 48201

Wayne State University School of Medicine, the country's largest single campus medical school, is an Equal Opportunity/Affirmative Action Employer.

HEAD OF BIOCHEMISTRY
AND BIOPHYSICS

The College of Agriculture and Life Sciences at Texas A&M University invites applications and nominations for the position of Head of the Department of Biochemistry and Biophysics. The department has recently developed a strategic plan to serve as a blueprint for an aggressive effort to enhance its national stature, and we seek an outstanding individual to lead this effort. The successful candidate will have a well-established and vigorous research program, a strong record of research accomplishment, and a demonstrated commitment to teaching. Review of candidates will begin June 15, 1999, and will continue until an appointment is made. Applicants should submit a complete curriculum vitae that includes a summary of research and teaching experience, and a statement of administrative philosophy. Applications and nominations should be sent to: **Dr. Neal K. Van Alfen, Head, Department of Plant Pathology and Microbiology, Texas A&M University, 120 L. F. Peterson Building, College Station, TX 77843-2132.**

Texas A&M University is an Equal Opportunity Employer.

ASSISTANT/ASSOCIATE PROFESSOR
DIVISION OF NEUROSURGERY
Harvard Medical School/
Brigham and Women's Hospital
Boston, Massachusetts

Harvard Medical School/Brigham and Women's Hospital, Division of Neurosurgery is seeking qualified applicants for a tenure-track Assistant or Associate Professor to head the brain tumor research effort in neurosurgery and develop a laboratory in tumor molecular biology. The individual should have demonstrated expertise in conducting laboratory research in molecular and cellular biology of tumors with specific emphasis on brain tumor research. The individual will also have an acknowledged track record in teaching. Ph.D. required. Candidates are expected to establish a high-quality, productive research program and must have their own NIH funding.

Send curriculum vitae, summary of research interests, and references to: **Peter M. Black, M.D., Ph.D., Division of Neurosurgery, Brigham and Women's Hospital, 75 Francis Street, Boston, MA 02115.**

POSITIONS OPEN

FACULTY POSITION FOR
TRANSLATIONAL SCIENTIST
SIDNEY KIMMEL CANCER CENTER

The Sidney Kimmel Cancer Center (SKCC) is actively recruiting a **RESEARCH SCIENTIST** with an interest in the clinical application of promising cancer treatments. Candidates should currently conduct an independent laboratory program of cancer research. Qualified Ph.D's and M.D's at all levels are encouraged to apply. Preference will be given to candidates with a strong track record or outstanding potential in translational research.

The Sidney Kimmel Cancer Center is committed to the rapid translation of laboratory discoveries to the treatment of cancer. This commitment is evidenced through close ties between basic laboratory scientists and the SKCC clinical trials program. The Cancer Center features a renowned faculty with research ranging from basic aspects of cancer biology and immunology to cancer gene therapy, immunotherapy, and clinical oncology research. Clinical research and patient access is conducted through a partnership with Sharp HealthCare, the largest nonprofit healthcare system in San Diego.

The Sidney Kimmel Cancer Center is located in the rich interactive scientific environment of San Diego's La Jolla research community, which includes other esteemed nonprofit research institutions, a major university, and numerous biotechnology companies.

Details about the Sidney Kimmel Cancer Center, the faculty, and the clinical oncology program can be found on the center's home page at **website: http://www.skcc.org**.

Interested candidates should submit a complete curriculum vitae, a description of current research interests, clinical interests, proposed future directions, and the names and addresses of three references to:

Chair, Search Committee, SCI
Sidney Kimmel Cancer Center
10835 Altman Row
San Diego, CA 92121

Affirmative Action/Equal Opportunity Employer.

DEPARTMENT OF
ELECTRICAL ENGINEERING
BROAD AREA SEARCH

Stanford University's Department of Electrical Engineering (**website: http://ee.stanford.edu**) seeks applicants for a tenure-track faculty position at the **ASSISTANT PROFESSOR** level. The Department is interested in outstanding candidates from all areas of research in electrical engineering. An earned Ph.D., evidence of the ability to pursue independent research, and a strong commitment to both graduate and undergraduate teaching are required.

The successful candidate will be expected to teach graduate and undergraduate courses, both in the candidate's specialty area and in related subjects, and to build and lead a team of graduate students in Ph.D. research. Applications, including a résumé, a publications list, a brief research and teaching plan, and the names of five references, should be sent by June 15, 1999, to:

Professor James D. Plummer
Department of Electrical Engineering
340 Panama Street, Godzilla 107
Stanford University
Stanford, CA 94305-9505

Stanford University is an Equal Opportunity/Affirmative Action Employer and welcomes nominations of women and minority group members and applications from them.

Sint Eustatius University, School of Medicine has positions available for Ph.D's in the basic sciences. Gross anatomy; histology; embryology; physiology; biochemistry; neuroscience.

FACULTY APPOINTMENT and remuneration commensurate with qualifications and experience. Sint Eustatius University, School of Medicine is located on the Island of Sint Eustatius in the Netherlands Antilles.

Reply with curriculum vitae to: **Sint Eustatius University, 72 Temple Street, Gardner, MA 01440.**

EDITOR

We are soliciting applications for an editor of a new journal to be started under the auspices of the American Society of Gene Therapy and published by Academic Press. The major mission of the journal will be to publish scientifically meritorious papers in the general areas of gene transfer, gene regulation, gene discovery, genetic and acquired diseases, animal models, and clinical trials. The editor will be responsible for editorial handling of the manuscripts, soliciting reviews, and commissioning news and views of the journal. The editor will work closely with the publisher and the editor-in-chief. The editorial offices will be located in San Diego, California. The applicant should have a Ph.D. in biology, critical scientific judgement, and broad based knowledge of biomedical research. Preference will be given to candidates that have editorial experience with current biological journals. Salary and benefits will be commensurate with experience. Candidates should submit their curriculum vitae to:

Inder Verma
Editor-in-Chief
The Salk Institute
10010 North Torrey Pines Road
La Jolla, CA 92037

Application Deadline: May 21, 1999

GRADUATE PROGRAM

Thomas Jefferson University | **College of Graduate Studies**

Thomas Jefferson University is a medically oriented university that, through its College of Graduate Studies and Center for Graduate Education and Training, offers education and training in disciplines related to biology, medicine, and patient care. The rapidly growing research programs of the University offer excellent opportunities for graduate training.

Ph.D. Programs

The College offers doctoral programs in nine disciplines: Biochemistry and Molecular Biology, Cell and Tissue Engineering, Developmental Biology and Teratology, Genetics, Immunology, Microbiology and Molecular Virology, Molecular Pharmacology and Structural Biology, Pathology and Cell Biology, and Physiology.

M.S. Programs

Programs leading to the Master of Science degree are offered in Biomedical Chemistry, Developmental Biology and Teratology, Microbiology, Nursing, Occupational Therapy, Pharmacology, and Physical Therapy.

Certificate Programs

This Fall, the Center for Graduate Education and Training will begin offering certificate programs in Clinical Research, Public Health, and Research Administration. These programs (equivalent to 15 credit hours of graduate education) address the needs of working professionals interested in career advancement or career options. Specific information on these programs is available from the Associate Dean, Director of Master's Programs in the Basic Sciences by e-mail to Georganne.Buescher@mail.tju.edu or by telephone at 215-503-5799.

Foerderer Videoconference Center

The Graduate Center for Education and Training will begin operating a state-of-the-art videoconference facility this Fall. The Center will offer courses, seminars, workshops, and symposia accessible to interested groups and individuals by on-site attendance or the videoconference medium. Specific information on this facility is available from the Videoconference Center Manager by e-mail to Jerome.Buescher@mail.tju.edu or by telephone at 215-503-0159.

Contact Information

Further information on specific programs and appropriate contact persons is available on the College web site at http://jeffline.tju.edu/CWIS/CGS.

General written, telephone, or e-mail inquiries may be directed to:

Ms. Jessie Pervall, Director of Admissions
College of Graduate Studies, Thomas Jefferson University
1020 Locust Street Suite M-46, Jefferson Alumni Hall
Philadelphia, PA 19107-6799
Telephone 215-503-4400 — FAX 215-503-3433
email: Jessie.Pervall@mail.tju.edu

Thomas Jefferson University
Philadelphia, Pennsylvania 19107

PROFESSOR AND DIRECTOR BRODIE LABORATORY
University of Illinois at Chicago
College of Dentistry

The University of Illinois at Chicago College of Dentistry has a tenured position as Full Professor available for a Senior Research Scientist (Ph.D., D.D.S., M.D.) who will act as the first Director of the Brodie Laboratory in the Department of Orthodontics. The Brodie Laboratory's purpose is to extend the boundaries of knowledge related to orthodontics and craniofacial biology by studying problems of craniofacial development, connective and mineralized tissues, and genetics from a molecular or cellular perspective. The successful candidate must have a strong record of achievement in biomedical/dental science, including developing and supervising interdisciplinary research programs, attracting extramural funding, and teaching of graduate and specialty students and possess a Ph.D., D.D.S., or M.D. degree. The individual must qualify for a joint professorial appointment in a basic science department. Salary commensurate with qualifications and experience. Applications should include a complete curriculum vitae, a statement of research interests, and the names of at least three individuals for reference. Review of applications will begin immediately. For full consideration, send applications by June 30, 1999, to: **Brodie Laboratory Search Committee, College of Dentistry, University of Illinois at Chicago, 801 South Paulina Street M/C 841, Chicago, IL 60612-7211.** *The University of Illinois is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and minorities.*

ASSISTANT/ASSOCIATE PROFESSOR VIROLOGY

The Department of Microbiology and Immunology at the East Carolina University School of Medicine invites applications for a tenure-track faculty position at the Assistant Professor or Associate Professor level. An individual utilizing modern molecular approaches in the general area of viral pathogenesis related to human health and disease is sought. Major responsibilities will include establishment and direction of an independent research program and participation in teaching of medical and graduate courses. Salary and rank will be commensurate with qualifications. Appointment at the Associate Professor level requires a strong record of continuous research funding including current extramural support and evidence of leadership in teaching and service. The Department has 13 full-time tenure-track faculty, an active Doctoral studies program, and is fully equipped with advanced facilities for virology, bacteriology, molecular biology, genetics, immunology, and animal research. Applicants should provide curriculum vitae, a letter describing research and teaching goals, and names and complete addresses of three references by mail to: **Virology Search Committee, Department of Microbiology and Immunology, School of Medicine, East Carolina University, Greenville, NC 27858-4354.**

East Carolina University is an Equal Opportunity/Affirmative Action University. Accommodates individuals with disability. Applicants must comply with the Immigration Reform and Control Act.

A faculty position in the tenure-track is open in the Department of Biochemistry and Molecular Pharmacology for any rank, **ASSISTANT** through **FULL PROFESSOR**. We seek someone with an active research program in molecular pharmacology who has a commitment to education. Approximately 25 percent to 30 percent effort will be for directing a team-taught course in pharmacology for medical students in the fall of their sophomore year. Applicants should send a curriculum vitae and direct three letters of recommendation to: **Dr. Gerald Litwack, Chairman, Department of Biochemistry and Molecular Pharmacology, Jefferson Medical College, Thomas Jefferson University, 350 BLSB, 233 South 10th Street, Philadelphia, PA 19107.** This search will continue until the position is filled. *Thomas Jefferson University is an Equal Opportunity Employer.*

POSITIONS OPEN

FACULTY POSITION DIVISION OF DRUG DELIVERY AND DISPOSITION
School of Pharmacy
The University of North Carolina at Chapel Hill

The Division of Drug Delivery and Disposition invites applications for a full-time, tenure-track position at the **ASSISTANT PROFESSOR** level (available January 1, 2000). Applicants must have a Ph.D. in pharmaceutics or a related discipline and relevant postdoctoral experience. Preference will be given to candidates who also have a professional degree in pharmacy.

The Division has active research programs in a variety of areas, including mechanisms of transport in the gastrointestinal tract, liver, and blood-brain barrier; regulation of drug-metabolizing enzyme systems; mechanisms of cellular delivery of traditional therapeutic agents and macromolecules; and pulmonary drug delivery. The successful candidate is expected to develop and maintain an independent, externally funded research program in the broad areas of pharmacokinetics or targeted drug delivery, and to participate in both professional and graduate instruction. The Division is particulary interested in candidates with expertise in pharmacokinetics, pharmacodynamics, or drug delivery at the cellular and molecular level.

Applicants should send a curriculum vitae, four letters of reference, and a statement of research interests to:

Gary M. Pollack, Ph.D.
Chair, Division of Drug Delivery and Disposition
School of Pharmacy, Beard Hall CB# 7360
The University of North Carolina at Chapel Hill
Chapel Hill, NC 27599-7360

Application review will continue until a suitable candidate is identified. *Women and members of minority groups are encouraged to apply. The University of North Carolina at Chapel Hill is an Equal Opportunity Employer.*

HEAD OF THE DEPARTMENT OF CHEMISTRY
University of Illinois at Urbana-Champaign

Applications and nominations are invited for the position of Head of the Department of Chemistry at the University of Illinois at Urbana-Champaign. The minimum qualifications for this position are the academic credentials or equivalent of a Full Professor in chemistry at a major research university, a national and international reputation for scholarly productivity in research, and the promise of leadership and administrative excellence. Salary open. Preferred starting date August 21, 1999.

To ensure full consideration, nominations and applications should be submitted by July 1, 1999. Applications and nominations should be sent to:

Professor James J. Coleman, Chair
Search Committee
c/o Renee Schum
School of Chemical Sciences
505 South Mathews Avenue
Urbana, IL 61801

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

CELL/MOLECULAR BIOLOGIST FORDHAM UNIVERSITY

Individuals are invited to apply for a tenure-track position at the **ASSISTANT/ASSOCIATE PROFESSOR** level. The department has an active research program and provides excellent physical facilities, state-of-the-art equipment, a stimulating research environment, start-up funds, and competitive salaries and benefits. Preference will be given to candidates who possess expertise in the area of cell/molecular biology and have an ongoing grant-supported research effort underway. The appointee will be expected to establish an active research program and participate in teaching at the graduate and undergraduate levels. Please submit a curriculum vitae and the names and addresses of three references by 15 June 1999 to: **Dr. Berish Y. Rubin, Chairman, Department of Biological Sciences, Fordham University, Bronx, NY 10458.** *Fordham University is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

CHEMICAL BIOLOGY

Two **TENURE-TRACK FACULTY POSITIONS** are available within the Department of Chemistry and Chemical Biology. Rank is open, although we are primarily interested in attracting exceptional faculty with externally funded research, with a concurrent interest in teaching at the undergraduate and graduate level. The successful individuals will maintain active research laboratories that include graduate and exceptional undergraduate students, and may interact with Physicists, Mathematicians, and Computer Scientists at Stevens. Cellular Chemical Biologist: Research interests may extend into cryo-electron microscopy, and may also include an emphasis in computational methods. The faculty member will teach undergraduate and graduate courses in cell biology and cell culture techniques. Bioinformatics Specialist: Research interests may include molecular modeling and code development. This individual will ideally have an understanding of the methods by which protein structure is determined. The faculty member will teach undergraduate and graduate courses in biomolecular protein structure-function relationships and will coordinate the bioinformatics graduate program. Please respond to: **Faculty Search, c/o Dr. Walter Ermler, Director, Department of Chemistry and Chemical Biology, Stevens Institute of Technology, Castle Point on Hudson, Hoboken, NJ 07030. E-mail: wermler@stevens-tech.edu.** Positions will remain open until filled. The earliest start-up date is August 1999.

Stevens Institute of Technology is located in Hoboken, New Jersey, just minutes from Manhattan and overlooking the Hudson River. It has a growing undergraduate and graduate student population, with a current emphasis on faculty development. Start-up packages are competitive. *The school is an Equal Opportunity Employer.*

PROFESSOR. The Department of Pathology and Laboratory Medicine at the University of Pennsylvania invites applications for a faculty position at the rank of Full Professor in the tenure track. The candidate should be a senior-level M.D., Ph.D., or M.D.-Ph.D. Molecular Immunologist with a focus on the biochemistry of signaling pathways. Particular concentration in T cell and hematopoietic signaling systems is desirable. Individuals should have an independent track record in this area and have shown the ability to participate in the training of both graduate and medical students. The environment within the University of Pennsylvania Medical Center for both collaborative basic and clinical research is outstanding. Curriculum vitae, a statement describing previous experience, and the names of three references should be submitted by June 30, 1999, to: **Mark I. Greene, M.D., Ph.D., Vice Chair, Division of Immunobiology, Department of Pathology and Laboratory Medicine, University of Pennsylvania, School of Medicine, 252 John Morgan Building, 3620 Hamilton Walk, Philadelphia, PA 19104-6082.** *The University of Pennsylvania is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

BASIC SCIENCE POSITION IN CARDIAC SURGERY

The University of Michigan is soliciting applications for a basic science **TENURE-TRACK FACULTY POSITION** in the newly formed Section of Cardiac Surgery. Candidates should have a background in tissue engineering, bioengineering, biomaterials, or associated areas. This position offers an exciting opportunity for academic growth, collaboration, teaching, and the development of a new program. A joint appointment in the Department of Biomedical Engineering or in other related discipline is anticipated. Candidates at all levels are encouraged to submit their curriculum vitae to: **Edward L. Bove, Professor and Head, Section of Cardiac Surgery, University of Michigan School of Medicine, F7830 Mott Hospital, 1500 East Medical Center Drive, Ann Arbor, MI 48109.** *The University of Michigan is a nondiscriminatory/Affirmative Action Employer.*

National Institutes of Health
National Eye Institute

The Laboratory of Ocular Therapeutics of the National Eye Institute has two fellowship position available for chemists to join a team in the isolation, characterization and identification of naturally occurring enzyme regulators in human and animal tissues. The position is available immediately. The incumbent should have a Ph.D. degree and postdoctoral experience in HPLC and Mass Spectroscopy for the characterization and identification of proteins, polypeptides and biochemical intermediates. Experience on a Finnigan LCQ Benchtop system is beneficial. The salary range, dependent on experience, is $30,000 - $50,000. U.S. citizens, permanent residents of foreign nationals may apply by sending a CV and list of references to **Dr. Peter F. Kador, Chief, Lab. Ocular Therapeutics, 10 Center Drive MSC 1850, NIH, Bethesda, MD 20892-1850 Tel. 301-496-6993. FAX 301-402-2399. E-mail kador@helix.nih.gov**

NIH is an Equal Opportunity Employer

ANNOUNCEMENT

DOES THIS SOUND LIKE YOU OR SOMEONE YOU KNOW?

"I have long been interested in science, and in helping people. During my training, I had a number of clinical experiences which convinced me that I wanted to specialize in immunology at the bench, but still have patient contact."

"I was always tinkering with my toys, taking them apart, trying to fit the square peg in the round hole. NIH is the only place to be for cutting-edge training, creativity, and pure excitement."

Has your interest always been to pursue medical research? Do the realities of staggering educational debt appear to prevent you from realizing your dreams? NIH offers a variety of clinical and basic science postdoctoral training fellowships that can be combined with educational loan repayment incentives. You owe it to yourself to know about these programs (or share the information with someone in need!) as you make your career decisions. You owe it to yourself to learn more about what NIH can do for you.

NIH Loan Repayment Benefits of $35,000 per Year

NIH, the world's leading biomedical research facility, has trained thousands of qualified students in neuroscience, pathology, immunology, molecular genetics, developmental biology, cell biology, molecular biology, virology, and structural biology, to name only a few areas in our intramural research program.

For more information on the Loan Repayment Program and postdoctoral training, visit our websites at:

http://www.training.nih.gov and
http://lrp.info.nih.gov

Toll Free: 1-800-528-7689 • TTY: 1-888-352-3001

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

National Institutes of Health
National Eye Institute

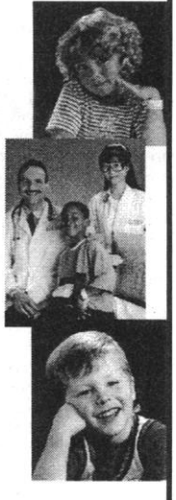
A postdoctoral position is immediately available in the Laboratory Ocular Therapeutics, National Eye Institute, for the study on the role of capillary cells in the development of diabetic microangiopathy. The research will be focused on the effects of various growth/survival factors on the signal transduction an gene expression of capillary pericytes that regulates pericyte survival under various stress environments induced by hyperglycemia and/or hypoxia. Candidates with experiences in molecular biology and cell biology are encouraged to apply. The salary range, dependent on experience, is $27,500 - $38,000. U.S. citizens, permanent residents or foreign nationals may apply by sending a CV and list of references to **Dr. Sanai Sato, LOT/NEI, 10 Center Dr., MSC 1850, Bethesda, MD 20892-1850. E-mail: sanai@helix.nih.gov**

NIH is an Equal Opportunity Employer

The Many faces of

Research

St. Jude Children's Research Hospital, located in Memphis Tennessee, is one of the world's premier research centers for research and treatment of catastrophic diseases in children, primarily pediatric cancers. St. Jude is a learning environment offering professional growth and diversity for the research technologist where biomedical education extends beyond the laboratory and clinical experience. Workshops, seminars and lectures are regularly presented by both the St. Jude faculty and distinguished visiting investigators. Our non-faculty research staff career ladder provides several levels of promotion and financial compensation for talented and motivated technologists to advance in their field.



Senior Research Technologist

We have an immediate need for a Senior Research Technologist to maintain the Leica Confocal Laser Scanning Microscope (CLSM) in the Central Imaging Shared Resource (CISR). The CISR currently has a transmission electronic microscope, a scanning electron microscope, and is adding a Leica CLSM by May 1999. The CLSM is part of a multi-user facility. You will prepare samples for immunofluorescence and acquire and process confocal images. Qualified candidate should have a BS or MS degree and 3-5 years experience in the operation and maintenance of a CLSM and use of image analysis programs. Experience with Windows NT Operating System and imaging software highly desired. Excellent interpersonal skills are also essential.

For additional information, please refer to our website:
www.stjude.org

Candidates may also call our Job Hotline at:
800-545-6292

Resumes may be sent to:
St. Jude Children's Research Hospital
Human Resources Dept. SC57
332 N. Lauderdale, Memphis, TN 38105
Fax: 901-495-3123
E-mail: human.resources@stjude.org

SJCRH is an equal opportunity employer.
Photos courtesy of St. Jude Biomedical Communications Dept.

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

POSITIONS OPEN

TENURE-TRACK POSITION MICROBIOLOGY
Rochester Institute of Biomedical Sciences
University of Rochester

The Center for Oral Biology in the Rochester Institute of Biomedical Sciences (RIBS) is seeking applications for a tenure-track **ASSISTANT/ASSOCIATE PROFESSOR** position in the area of microbiology. Successful applicants must possess a Ph.D. with a minimum of two years of postdoctoral experience and demonstrate the potential to develop and maintain a rigorous, externally funded research program. Applicants at the more senior level would be expected to demonstrate a strong history of research accomplishment and extramural funding. Preference will be given to individuals with demonstrated interest in some aspect of oral microbiology.

RIBS is a newly founded research institute in which multidisciplinary studies in the areas of aging and development; cancer biology; cardiovascular biology; human genetics and molecular pediatric disease; and vaccine biology and immunology will be emphasized. The Center for Oral Biology, which is noted for its successful, team-oriented environment, will be housed in a new research building (**website: http://www.urmc.rochester.edu/Ribs/**).

In addition to their RIBS appointment, faculty in the Center for Oral Biology will also be appointed to a traditional department within the University.

To apply, please send a letter of interest containing a brief summary of research goals, curriculum vitae, and the names of three references to: **Dr. Lawrence A. Tabak, Director, Center for Oral Biology, School of Medicine and Dentistry, Box 611, 601 Elmwood Avenue, Rochester, NY 14642.**

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

FACULTY POSITION IN ORTHOPEDIC RESEARCH

A tenure-track faculty position at the **ASSISTANT PROFESSOR** level is available in the Division of Orthopedics, Department of Surgery at the University of Wisconsin–Madison. Researchers in all areas of connective tissue biology are encouraged to apply. The position offers a competitive salary, excellent resources and laboratory space, as well as an institutional commitment within a major research university. Candidates should have expertise in cell and molecular biology and should be seeking a career in academic research. Applicants must have a Ph.D. and postdoctoral training. The successful candidate will be expected to establish a recognized and externally funded program in connective tissue biology related to orthopedic science. He or she will be expected to interact with existing orthopedic faculty for multidisciplinary collaborative research and contribute to the orthopedic surgery educational program, which includes training of Residents, Fellows, and graduate students.

The Search Committee will accept nominations and applications until the position is filled. Letters of interest should briefly describe research accomplishments and future plans. In addition, curriculum vitae, three sample publications, and names, addresses, and telephone numbers of three references should be sent to:

Ray Vanderby, Ph.D.
Chair of Search Committee
Orthopedic Surgery
University of Wisconsin–Madison
600 Highland Avenue
Madison, WI 53792-3228

Biology. **ASSISTANT** or **ASSOCIATE PROFESSOR**. University of La Verne. Tenure-track, academic year appointment available September 1999. Teach cell biology, molecular biotechnology, co-teach developmental biology, interdisciplinary courses, and non-majors biology. Ph.D. is preferred. Evidence of successful teaching experience is required. Details at **website: http://www.ulv.edu/hr/empopps.htm.**

POSITIONS OPEN

ASSISTANT PROFESSOR OF CHEMISTRY

The Department of Chemistry at Kent State University invites applications for a tenure-track Assistant Professor position, starting as early as August 1999. A Ph.D. is required; postdoctoral research experience is desired, and research interests should be in the general areas of biological membranes or other lyotropic liquid crystals. Specific training in analytical, physical, and organic chemistry and/or biochemistry is acceptable and specialized undergraduate and graduate teaching responsibilities will correspond with this background. Specific research areas might include structure/function of membrane lipids/proteins, signal transduction, biosensors, surfactants, lyotropic polymers, nanostructured materials, etc. The appointee will be expected to establish a vigorous research program. Multidisciplinary approaches and interaction with the Liquid Crystal Institute will be encouraged. Applicants should send a curriculum vitae, a summary of research experience (indicating the applicants' most important contributions), a detailed plan for future research and grant applications, a statement of teaching philosophy and unofficial undergraduate and graduate transcripts of grades. The names (with addresses and telephone numbers) of three mentors or colleagues who the applicant will request to send confidential letters of recommendation must also be included. In the event that an acceptable Assistant Professor candidate is not identified, applicants for a more advanced rank will be considered. Application materials and letters of recommendation should be sent to:

Dr. Rathindra Bose
Department of Chemistry
Kent State University
Kent, OH 44242

The closing date for applications is July 1, 1999, or until the position is filled. *Kent State University is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

RESEARCH ASSISTANT PROFESSOR DEPARTMENT OF PATHOLOGY

The Division of Immunopathology, Department of Pathology at the University of Miami, School of Medicine is seeking a Research Assistant Professor. An advanced degree (M.D. or Ph.D.) with postdoctoral experience in molecular immunology, cellular immunology, and cell culture systems is desired. Individual will be performing and supervising basic research, and expected to assist in the design of experiments, perform laboratory testing, and oversee daily activities of technical research staff. Areas of research will include transplantation immunology and immunological tolerance. This person is expected to participate and establish scientific collaborations and acquire sponsored funding. Salary commensurate with level of experience.

Interested individuals should send curriculum vitae and write to:

Phillip Ruiz, M.D., Ph.D.
Professor
Department of Pathology
University of Miami School of Medicine
P.O. Box 016960
Miami, FL 33101

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

RESEARCH ASSOCIATE position available immediately to study the interaction of cockroach voltage-dependent sodium channels with pyrethroid insecticides using site-directed mutagenesis, two-electrode voltage-clamp (oocytes), and whole-cell and outside-out patches (HEK293 cells). Focus is on the identification of the amino acid residues responsible for sodium channel insensitivity to pyrethroids. Prior experience in molecular biology or electrophysiology is required. Please send/FAX curriculum vitae and arrange to have three references sent to: **Dr. Ke Dong, 106 Pesticide Research Center, Michigan State University, East Lansing, MI 48824. Telephone: 517-432-2034; FAX: 517-353-5598; e-mail: dongk@pilot.msu.edu.**

POSITIONS OPEN

TENURE-TRACK POSITION CELL AND DEVELOPMENTAL BIOLOGY
Rochester Institute of Biomedical Sciences
University of Rochester

The Center for Oral Biology in the Rochester Institute of Biomedical Sciences (RIBS) is seeking applications for a tenure-track **ASSISTANT/ASSOCIATE PROFESSOR** position in the area of cell and/or developmental biology. Successful applicants must possess a Ph.D. with a minimum of two years of postdoctoral experience and demonstrate the potential to develop and maintain a rigorous, externally funded research program. Applicants at the more senior level would be expected to demonstrate a strong history of research accomplishment and extramural funding. Preference will be given to individuals with documented experience and interest in some aspect of craniofacial biology.

RIBS is a newly founded research institute in which multidisciplinary studies in the areas of aging and development; cancer biology; cardiovascular biology; human genetics and molecular pediatric disease; and vaccine biology and immunology will be emphasized. The Center for Oral Biology, which is noted for its successful, team-oriented environment, will be housed in a new research building (**website: http://www.urmc.rochester.edu/Ribs/**).

In addition to their RIBS appointment, faculty in the Center for Oral Biology will also be appointed to a traditional department within the University.

To apply, please send a letter of interest containing a brief summary of research goals, curriculum vitae, and the names of three references to: **Dr. Lawrence A. Tabak, Director, Center for Oral Biology, School of Medicine and Dentistry, Box 611, 601 Elmwood Avenue, Rochester, NY 14642.**

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

BIOINFORMATICS SUPPORT

Genetics Computer Group, Inc. has openings in our highly regarded bioinformatics support team. Based in Madison, Wisconsin, our team provides assistance to the worldwide community of Biologists that use the GCG® Wisconsin Package™ for sequence analysis. Primary responsibilities will be answering sequence analysis and software management questions from both Biologists and System Administrators; secondary responsibilities include providing feedback to the software development team and reviewing new software. The ideal candidate will have an advanced degree in molecular biology or equivalent experience, a strong background using sequence analysis software, experience using the GCG Wisconsin Package, excellent English verbal and written communication skills, and UNIX system experience. This is an opportunity to be part of a growing company that leads the sequence analysis software industry and provides competitive salaries, excellent benefits, and a friendly working environment. For more information, visit our **website: www.gcg.com**. To apply, please send curriculum vitae and references to: **Genetics Computer Group, Inc., Attn: Lynn Miller, 575 Science Drive, Madison, WI 53711. E-mail: resume@gcg.com.**

POSTDOCTORAL POSITIONS in HIV research are available to study cellular immune responses during vaccination/primary infection and the evolution of drug resistance in human and macaque model systems. Experience in molecular biology, retrovirology, and/or cellular immunology required. Send curriculum vitae to:

Dr. Eric Delwart
Department of Medicine
University of California San Francisco
Blood Centers of the Pacific
270 Masonic Avenue
San Francisco, CA 94118
E-mail: delwarte@medicine.ucsf.edu

The University of North Carolina at Chapel Hill
and Paradigm Genetics, Inc.

Post Doctorial Fellow

Applications are invited for a joint postdoctoral research position in the laboratories of Dr. Alan Jones (UNC) and the Plant Research Department of Paradigm Genetics, Inc., headed by Dr. Jorn Gorlach. Research projects involve a functional genomic approach to examine the role of several genes controlling plant growth and development. Qualified applicants will possess a firm grounding in recombinant DNA technology, plant transformation, and plant growth analyses. Excellent written and verbal communication skills combined with the energy it will take to join a hardworking competitive team are also necessary to fill this position. Applicants should send a complete curriculum vita and three letters of reference to: **Dr. Alan Jones, Department of Biology, The University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-3280. Direct inquires to: alan_jones@unc.edu**

UCR/UCLA PROGRAM IN BIOMEDICAL SCIENCES
UNIVERSITY OF CALIFORNIA, RIVERSIDE

MOLECULAR MECHANISMS OF CELLULAR STRESS

The Division of Biomedical Sciences at the University of California, Riverside currently has four tenure-track faculty positions available at the Assistant Professor level for individuals wishing to join a group of multidisciplinary researchers investigating common stress responses. Outstanding applicants at the senior level (Associate and Full Professors) will also be considered. Recent research in many apparently divergent areas of biomedical science has begun to focus upon characterizing common molecular mechanisms of cellular stress. Various genes/proteins appear to be regulated through common signal transduction pathways in response to periods of both low and extreme cellular stress, which provide a means for the cell to recover normal function or lead to various pathologies. Strengths within the Division include cardiovascular disease (LDL, cigarette smoke and shear stress), cancer, ionizing and non ionizing radiation, hormonal and osmotic stress. We are interested in recruiting interactive faculty employing modern molecular biological techniques to study gene regulation with micro array technology or other approaches in order to define common stress pathways. Highly competitive start-up funds and laboratory space will be available for successful applicants. All new faculty will be expected to obtain substantial extramural funding.

The Division of Biomedical Sciences administers a joint accelerated 7–year B.S./M.D. program with the University of California at Los Angeles. The faculty teach the first two years of medical school instruction. Faculty in the Division are expected to maintain a vigorous research program and to contribute to medical and graduate teaching programs. The program is seeking investigators who can provide teaching expertise in major medical school courses in immunology, neurosciences, histology, virology, gross anatomy and pathology. Initial review of applications will begin on May 15, 1999, and the positions will remain open until filled.

Interested investigators should submit an application including: a *curriculum vitae,* a description of research history and future directions, a history and the status of current funding, and the names of three references. Please include your email address and fax number to: **Michael B. Stemerman, M.D., Chairman, Search Committee, Division of Biomedical Sciences, University of California, Riverside, California 92521-0121.** Telephone: (909) 787-5705, Fax: (909) 787-5504, Email: michael.stemerman@ucr.edu.

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

POSTDOCTORAL POSITIONS AVAILABLE

National Institute on Deafness and Other Communication Disorders Laboratory of Molecular Genetics

The Laboratory of Molecular Genetics is housed in a spacious new building with well equipped laboratories and many collegial scientists. Candidates (US citizens or non US citizens) should have a Ph.D. and/or MD with five or fewer years of relevant postdoctoral experience.

POSTDOCTORAL POSITION

A postdoctoral position is available in the **Section on Murine Genetics**, Laboratory of Molecular Genetics at the National Institute on Deafness and Other Communication Disorders to identify and characterize genes that are important for the functioning of the mammalian inner ear. For recent publications, see Nature Genetics (1998) 19, 390-394; Science (1998) 280, 1444-1447; Genomics (1998) 44, 266-272. We seek a highly motivated and outstanding individual to participate in projects to establish gene expression profiles of the inner ear using Serial Analyses of Gene Expression (SAGE) and to positionally clone mouse deafness mutants. A strong background in molecular biology and/or mouse genetics with publications in peer reviewed journals is required. Please send your CV, names and email addresses of three references and a short description of your future research plans to: **Konrad Noben-Trauth, Ph.D.**, National Institute on Deafness and Other Communication Disorders, 5 Research Court, Rockville, MD 20850. Phone: (301) 402-4223 - Fax: (301) 402-5354 - email: nobentk@nidcd.nih.gov.

POSTDOCTORAL POSITIONS

Postdoctoral positions are available in the **Section on Human Genetics**, Laboratory of Molecular Genetics, National Institute on Deafness and Other Communication Disorders to conduct genetic linkage analyses on families with hearing impairment, as well as positional cloning and functional analyses of genes crucial for development and differentiation of the auditory system. Recent papers from the LMG include: AM J Hum Genet (1998) 62: 904-915; Science (1998) 280:1444-1447; Science (1998) 280:447-1451; Nature Genetics (1998) 18:215-217; New England Journal of Medicine (1998) 339: 1500-1505. Please send your curriculum vitae, including a bibliography, reprints, a description of your research interests and the names and addresses of three references to: **Thomas B. Friedman, Ph.D.**, Chief, Laboratory of Molecular Genetics, National Institute on Deafness and Other Communication Disorders, National Institutes of Health, 5 Research Court, Rockville, Maryland 20850 (email: friedman@nidcd.nih.gov).

POSTDOCTORAL POSITIONS

Postdoctoral positions are also available in the **Section on Human Genetics**, Laboratory of Molecular Genetics, National Institute on Deafness and Other Communication Disorders to identify and analyze genes important for craniofacial and inner ear development and function. Both human and mouse models are utilized in these studies. Recent publications include: Am J Hum Genet (1998) 62: 816-823; Genomics (1996) 34: 299-303. Please send your curriculum vitae, including a bibliography, reprints, a description of your research interests and the names and addresses of three references to: **Andrew J. Griffith, MD, Ph.D.**, Neuro-Otology Branch and Laboratory of Molecular Genetics, National Institute on Deafness and Other Communication Disorders, National Institutes of Health, 5 Research Court, Rockville, Maryland 20850 (email: griffita@nidcd.nih.gov).

NIH is an Equal Opportunity Employer

POSITIONS OPEN

DIRECTOR
SPONSORED RESEARCH AND CONTRACTS
SOUTHEASTERN LOUISIANA UNIVERSITY

Southeastern Louisiana University is seeking candidates for the position of Director of Sponsored Research and Contracts available July 1999. Qualifications: Doctoral degree. Five years of leadership experience in grant and sponsored research project administration in a college, university, or comparable environment is required. The successful candidate must demonstrate the following: (1) leadership necessary to direct a growing grants operation, (2) knowledge necessary to stimulate faculty to seek external funding, (3) excellence in professional judgement and interpersonal skills, (4) excellence in organizational, written and oral communication, and analytical skills, (5) a proven record in successful grant writing, (6) an in-depth knowledge of external funding sources, (7) a working knowledge of laws, regulations, and policies that affect grants acquisition and compliance, and (8) knowledge of budgeting and budget development. Salary is commensurate with experience and qualifications. Review of completed applications will begin immediately, and continue until the successful candidate is identified. Send a letter of application, including a professional summary statement, curriculum vitae or résumé, and three current letters of reference and should be sent to: **Dr. Stephen W. Ragan, Chair, Search Committee for Director of Sponsored Research and Contracts, Southeastern Louisiana University 10671, Hammond, LA 70402. Telephone: 504-549-2217; FAX: 504-549-2070; e-mail: sragan@selu.edu.** *SLU is an Affirmative Action/ADA/Equal Employment Opportunity.*

RESEARCH ASSISTANT PROFESSOR

The Department of Obstetrics and Gynecology at The University of Alabama at Birmingham has a vacant non–tenure-track, research faculty position open in the Division of Gynecologic Oncology. The applicant should have a Ph.D. in biology/cell biology with postdoctoral training in the area of gene therapy and ovarian cancer. The applicant should possess advanced laboratory skills and should demonstrate ability in translational research. The applicant will be expected to participate in current ovarian and other gynecologic cancer gene therapy research initiatives and to develop an independent research program in areas complementing those of the current faculty. Send curriculum vitae and a statement of research interests to: **Harvey L. Ikner, Executive Administrator, University of Alabama at Birmingham Department of Obstetrics and Gynecology, Liberty National 613, 301 South 20th Street, Birmingham, AL 35233.** Application deadline is July 31, 1999.

The University of Alabama at Birmingham is an Equal Employment Opportunity Employer.

ZOOLOGIST
CLARKE COLLEGE

Clarke College, a growing, Catholic, coeducational, liberal arts college in Dubuque, Iowa seeks a qualified Zoologist with field experience for a nine-month, teaching, tenure-track position in its Biology Department. Position begins in the fall of 1999. Candidates should have completed a Ph.D. Individuals should have a documented, strong record of successful teaching and be supportive of the liberal arts. Candidate will teach undergraduate courses in their area of expertise. Other responsibilities will include teaching introductory biology, supervising undergraduate research projects, and advising students. Other possible course responsibilities may include vertebrate structure or ecology or evolution. Review of applications will begin May 16, 1999. Applicants should send a current curriculum vitae/résumé, a letter of application indicating teaching philosophy and research interests, copies of transcripts, and three letters of recommendation with telephone numbers to: **Dr. Mary Coan, Chair–Biology Department, Clarke College, 1550 Clarke Drive, Dubuque, IA 52001-3198.** Visit our **website: www.clarke.edu.**

POSITIONS OPEN

Ambion

MOLECULAR BIOLOGISTS
BIOCHEMISTS

Ambion, a rapidly growing biotechnology company that develops and produces innovative research products, is seeking **SENIOR SCIENTISTS** to develop independent research programs. Candidates should have a Ph.D. in molecular biology or related field, a strong publication record, and an entrepreneurial spirit. Experience with *in situ* hybridization, RNA, or protein engineering a plus. Ambion is located in Austin, Texas, the state capitol and home of the University of Texas. Austin is situated on the edge of the Texas hill country and highland lakes region.

Ambion offers a stimulating work environment, competitive salary, company-paid insurance, 401(k) plan, employee stock option plan, tuition reimbursement plan, and bonus program.

Reply to:

Ambion, Inc. (Job #194)
2130 Woodward Street
Austin, TX 78744-1832
Website: www.ambion.com
E-mail: resumes@ambion.com

Equal Opportunity Employer.

SENIOR RESEARCH ASSOCIATE and **POSTDOCTORAL POSITIONS** are available to lead novel studies in a highly interactive glycobiology group in the new Rochester Institute of Biomedical Sciences. The group will occupy newly constructed research space this fall (**website: http://www.urmc.rochester.edu/Ribs/**). One project will examine the targeting and interactions among glycosyltransferases. A second area involves dissection of the hierarchical pathways that underlie the initial synthesis of O-linked glycoproteins. The third line of inquiry seeks to define the functional roles of O-linked glycoproteins. Highly motivated individuals with a strong background in cellular, chemical, or molecular biology are encouraged to apply. We also seek individuals with training in synthetic organic chemistry or mass spectroscopy who have had experience in glycobiology. For individuals with two or more years of productive postdoctoral experience, appointments can be made at a faculty (non–tenure-track) level. To apply, please send your curriculum vitae and the names of two references to: **Dr. Lawrence A. Tabak, Rochester Institute of Biomedical Sciences, Medical Center Box 611, University of Rochester, Rochester, NY 14642. E-mail: lawrence_tabak@urmc.rochester.edu; website: http://www.urmc.rochester.edu/gebs/faculty/Tabak.htm.** *The University of Rochester is an Equal Opportunity/Affirmative Action Employer.*

Research and development **INTERNATIONAL TECHNOLOGIST** (Virginia blends). Maintain continuity and uniformity of existing cigarette and fine-cut blends, with a focus on the Canadian and other strategic Virginia blend markets. Maintain and develop bill of material structures required for the company's materials resource planning system. Provide input into the replacement of the materials resource planning system by a global product specifications system. Once the global product specifications system is in place, maintain the tobacco segment of the system for Canadian and other original blends. Participate in activities of Canadian industry and government agronomy agencies, and coordinate development work originating from those agencies. Liaise with other departments to ensure adherence to leaf and blend specifications. Requirements: High school diploma plus two years of experience in job offered or in research and development of Virginia blend tobacco products. Salary range $47,000 to $55,900 per year, 37.5 hours per week, Monday–Friday, 8:00 a.m. to 4:30 p.m. Submit résumés to: **R. J. Reynolds Tobacco Company, Susan Clapp, Department NL, P.O. Box 1487, Winston-Salem, NC 27102-1487.**

POSITIONS OPEN

RESEARCH ASSOCIATE
MOLECULAR MECHANISMS
OF SIGNAL TRANSDUCTION

Applications are invited to compete for available hard money positions to investigate cell signaling mechanisms during development. Successful candidates will join a research team active in the investigation of signal transduction, regulation of gene expression, embryotoxicity, and genetic determinants of normal and abnormal development. Postdoctoral experience and a strong background in molecular/molecular genetic methodologies, cell and/or developmental biology are required. Applicants should submit (1) curriculum vitae, (2) a statement of current research activities, and (3) names of three references to: **Dr. Robert Greene, Department of Biological and Biophysical Sciences, ULSD, Health Sciences Center, University of Louisville, Louisville, KY 40292.** *The University of Louisville is an Equal Employment Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

CLINICAL INVESTIGATOR
ENDOCRINOLOGY
Mount Sinai School of Medicine

Mount Sinai School of Medicine is a leader in medical research and education. The Department of Medicine, Division of Endocrinology and Metabolism at Mount Sinai School of Medicine seeks a Clinical Investigator to direct our growing osteoporosis service and to develop an academic program in bone disease, encompassing the broad area of medicine, geriatrics, and women's health. Research experience and academic productivity are essential. Applicants should be Board-certified or Board-eligible in endocrinology and metabolism.

Interested applicants should send their curriculum vitae and three references to: **Dr. Terry F. Davies, Director, Division of Endocrinology and Metabolism, Box 1055, Mount Sinai School of Medicine, One Gustave L. Levy Place, New York, NY 10029-6574.** *We are an Equal Opportunity Employer fostering diversity in the workplace.*

FISHERY SCIENTIST
NATIONAL MARINE FISHERIES SERVICE

National Oceanic and Atmospheric Association (NOAA) National Marine Fisheries Service seeks Fishery Scientist/Ecologist as **CHIEF** of Salmon Analysis Branch ($71,000 to $93,431), Santa Cruz/Tiburon Laboratory to lead team of Population Modelers, Ecologists, Statisticians, and Economists, engaged in research to conserve and restore endangered salmon in California.

Duties include research; program planning, development, and coordination; participation in policy recommendations. See **website: www.usajobs.opm.gov/** for more information. Ph.D. or equivalent *and must be U.S. citizen.* Apply to: **National Oceanic and Atmospheric Association Human Resources, 7600 Sand Point Way N.E., Seattle, WA 98115, Attn: W/NMF/990199.abc,** postmarked NLT June 4, 1999. *Department of Commerce is an Equal Opportunity Employer.*

MASSACHUSETTS INSTITUTE
OF TECHNOLOGY

PRINCIPAL RESEARCH SCIENTIST to work for **David G. Cory,** Professor of Nuclear Engineering, to develop sponsored research in bionuclear science areas in the radiation science and technology discipline. Requirements: advanced degree in the physical sciences or combination of related education and high-level research. Notable experience in quantum information processing required, particularly NMR approaches to quantum computation. Proven independent ability to generate and develop research concepts needed. Must have noteworthy record of independent research supervised.

E-mail résumé, referencing Job. No. 99-0277R, research interests description, and three references to **website: http://web.mit.edu/personnel/www/resume.htm.** *MIT is an Equal Opportunity/Affirmative Action Employer. MIT is a nonsmoking enviroment.*

REAL NEEDS REAL OPPORTUNITIES

OSI Pharmaceuticals, Inc. is an integrated drug discovery company with a mission to discover and develop novel pharmaceutical products. We have created a state-of-the-art drug discovery capability to progress lead molecules from target identification through early clinical development. There are exciting opportunities to join multi-disciplinary project teams in several drug discovery programs.

DIRECTOR OF INFORMATION TECHNOLOGY

Managing our Information Systems, you will focus on implementing the most efficient network to create and maintain intranet-based informatics tools to access internal/external discovery databases; design and maintain internal databases; as well as manage our multi-site corporate network and MIS infrastructure. In accomplishing this, you will help improve drug discovery and development through innovative use of informatics while supervising 5 employees. To qualify, you must have a MS/Ph.D., pharmaceutical or biotechnological IT experience with a focus on drug discovery/development, in addition to strong leadership, project management and communication skills. You must be a pro-active IT spokesperson with proficiency in ORACLE, ISIS, data analysis software and Microsoft; and have the ability to integrate the IT network in the strategic intent of the Company.

COSMECEUTICALS

OSI's expanding discovery program with Pfizer is focused on identifying cosmeceutical agents for the control of pigmentation, wrinkles and hair growth.

• Research Scientists

Target identification and selection, assay development for HTS, functional assay development for lead optimization, while supervising 2 Research Associates. You will also ommunicate with internal/external collaborators. Doctorate degree, 2-5 years' post-doc experience in skin biology field, broad training in molecular cell biology and biochemistry, and excellent oral/written presentation skills required.

• Research Scientist - Pharmacology

In this dynamic group, you will design and perform animal studies for pigmentation control, hair growth and photo aging repair. Supervise 1-2 staff members and communicate with internal/external collaborators. Ph.D. in Pharmacology, 2-5 years' post-doc experience in skin biology field, topical application and evaluation, basic statistical analysis and excellent oral and written skills required.

RESEARCH SCIENTIST - ASSAY DEVELOPMENT

This position will, in the context of an ongoing drug discovery program, be responsible for the development and implementation of novel assay technologies and assay miniaturization. You will oversee specific projects, supervise 1-2 Technicians, write reports, and make internal/external oral presentations. Doctorate degree required.

SYSTEMS SPECIALIST/LABORATORY AUTOMATION

Become a member of the team responsible for the development, operation and maintenance of a state-of-the-art high-throughput screening center. Handle systems troubleshooting, programming performance, evaluation, repair and maintenance, to ensure consistent, contamination free performance. You will interface with project teams to create effective screening software; devise, debug and document procedures; and take the proper corrective action to calibrate or repair systems. Ideal candidates must have a BS degree and/or equivalent in a scientific discipline; 0-2 years' experience and strong knowledge of PC hardware, software, peripheral configuration, troubleshooting, DOS and Windows. A technical background in the repair, troubleshooting and maintenance of lab equipment; and familiarity with RS232 communications and programming skills strongly preferred.

OSI Pharmaceuticals offers a superb benefits package, including 3 weeks vacation, stock options, 401(K) and opportunities for career development. Qualified candidates may send resume indicating position of interest, to: **Director, Human Resources, OSI Pharmaceuticals, Inc., 106 Charles Lindbergh Boulevard, Uniondale, New York 11553; FAX: (516) 222-0114; e-mail: employment@osip.com.** Equal Opportunity Employer M/F/D/V.

www.osip.com

OSI Pharmaceuticals
Real Solutions.

Oak Ridge National Laboratory

ECOLOGICAL MODELER

The Environmental Sciences Division at the Oak Ridge National Laboratory has a research staff position available for an Ecological Modeler. The successful candidate will develop and apply ecological models to evaluate impacts of water resource development projects, emphasizing innovative approaches to the assessment of cumulative impacts and resource changes at local and regional scales. Preparing proposals and marketing potential sponsors are also required. Publication in refereed journals is expected.

Successful applicant will have a PhD or an MS with equivalent experience. Individuals with a background in mathematical or theoretical ecology and experience in developing and applying individual-based population models are preferred, and experience in quantitative analyses of aquatic ecosystems is highly desirable. Excellent written and oral communication skills and an ability to interact effectively on multidisciplinary teams are required.

Interested candidates should submit a letter of interest outlining unique skills and capabilities, a resume, and the names of three references by **June 15, 1999, to Dr. James M. Loar, Environmental Sciences Division, Oak Ridge National Laboratory, P. O. Box 2008, Oak Ridge, Tennessee 37831-6036; Email: loa@ornl.gov.**

More information about the Oak Ridge National Laboratory and the Environmental Sciences Division is available on the Internet at:

http://www.ornl.gov

http://www.esd.ornl.gov

Oak Ridge National Laboratory, a multipurpose research facility managed by Lockheed Martin Energy Research Corporation for the U.S. Department of Energy, is an equal opportunity employer committed to building and maintaining a diverse workforce.

ornl - *Bringing Science to Life*

SYSTEMATIC ENTOMOLOGIST CALIFORNIA ACADEMY OF SCIENCES

The California Academy of Sciences invites applications for a regular faculty position (10-month annual basis) of **ASSISTANT CURATOR** of entomology. Individuals are sought who (1) have primary interest in, and commitment to, collection-based research in systematic entomology (including arachnids and myriapods); (2) are familiar with, and capable of employing, a range of systematic methods and techniques (e.g., comparative morphological, molecular, phylogenetic, and historical biogeographic analyses) in their research; (3) have interest and experience in field work; and (4) will contribute to the development and curation of a major collection of worldwide scope and use. Candidates must have a Ph.D. and an active research program. Responsibilities include original research, and participation in curatorial, administrative, and educational activities of the Academy. Detailed position description and other information are available through the Academy's **website: www.calacademy.org/research**. Applicants should forward a curriculum vitae, description of research goals, and the names, mailing and e-mail addresses, and telephone and FAX numbers of three references to: **Human Resources #ACE, California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118-4599.** Deadline for applications is September 1, 1999.

Inflazyme Pharmaceuticals has openings for **RESEARCH SCIENTISTS/ASSOCIATES** in physiology/pharmacology (minimum M.Sc., two to five years of industrial experience, must have extensive experience with animal models), **RESEARCH ASSOCIATES** in cell biology (M.Sc. with minimum of two years or B.Sc. with minimum of five years of industrial experience in cell signaling, cloning, and/or protein biochemistry), **RESEARCH ASSISTANTS** in biology (B.Sc. or equivalent, minimum of two years of industrial experience in biological assay development and implementation). Expertise in inflammation/immunology highly desirable. Refer to positions RS405/99, RA305/99, RT205/99 respectively. Inflazyme is a dynamic pharmaceutical company specializing in development of therapeutics for the treatment of inflammatory diseases. Inflazyme offers a competitive salary and benefits package. Please send or FAX résumés to: **Human Resources, Inflazyme Pharmaceuticals Ltd., 425-5600 Parkwood Way, Richmond, British Columbia V6V 2M2 Canada. FAX: 604-279-8711.**

Research and development **INTERNATIONAL TECHNOLOGIST II** (cigar blends). Develop cigarette and fine-cut blends, with a focus on the Canadian and other strategic Virginia blend markets (Africa, Far East, and Middle East). Provide input/approval for Canadian and offshore Virginia tobacco purchases, and assist in the establishment of global leaf specifications. Maintain and develop Canadian cigar blends. Ensure adherence to leaf and blend specifications. Requirements: High school diploma plus two years of experience in job offered or in research and development of cigar blend tobacco products. Salary range: $47,000 to $55,900 per year, 37.5 hours per week, Monday–Friday, 8:00 a.m. to 4:30 p.m. Submit résumé to: **R. J. Reynolds Tobacco Company, Susan Clapp, Department NL, P.O. Box 1487, Winston-Salem, NC 27102-1487.**

MEDICAL WRITERS

Leading New York City medical education/communications company has an immediate opening for Medical Writers. Familiarity with development of biological/biomedical sciences manuscripts essential. Ph.D. or advanced degree in the biological sciences preferred. The ability to write clearly and concisely is essential. The candidate will be expected to work on his/her own initiative, interface with Physicians, clients, and Program Directors. Some travel may be required. Please send résumé to: **Human Resources Department, 8th Floor, 16 West 22nd Street, New York, NY 10010.**

POSITIONS OPEN

MASS SPECTROMETRIST. There is an immediate opening for a Staff Mass Spectrometrist in the Southern California Regional Mass Spectrometry Facility, located in the Chemistry Department of the University of California, Riverside. This facility supports Researchers with a wide range of mass spectrometry services, including EI, CI, FAB, MIKES, GC-MS, ESI/APCI, and MALDI. Present instrumentation includes a VG-ZAB-2SE and VG-7070 double-focusing mass spectrometers, a Hewlett Packard GC-IR-MS system, a FINNIGAN MAT 900, and a Vestec Laser TecH Research MALDI time-of-flight mass spectrometer. This position offers an opportunity to interact with a wide range of users and a large number of analytical chemistry challenges. Accordingly, candidates with experience using a broad variety of mass spectral techniques and instrumentation and who have good communications skills are sought. Ideally, the candidate will hold a Ph.D. degree with extensive practical mass spectrometry experience with biological molecules.

Salary will be commensurate with experience and academic background in the range of $41,904 to $52,296. This position will be open until filled. Interested candidates should send a résumé and experience letter to: **The University of California, Riverside, Human Resources Employment Office, 1160 University Avenue, Suite C, Riverside, CA 92521.** Position number: 99-03-020. *The University of California is an Affirmative Action/Equal Opportunity Employer.*

INFORMATICS SPECIALIST MASSACHUSETTS GENERAL HOSPITAL

The Cardiovascular Research Center is seeking a qualified individual to support large-scale genomics projects in zebrafish.

Responsibilities include developing and maintaining database systems for laboratory information management; designing user interfaces for data entry and retrieval; coordinating data submission to community databases and data exchange with collaborating laboratories; and assisting laboratory scientists with the identification and use of public sequence analysis resources and standard sequence analysis software (BLAST, GCG). The position requires training in molecular biology or genetics at the M.S. or Ph.D. level and training or significant experience in computer programming and informatics. Applicants should be familiar with the UNIX operating system, PERL, CGI scripting and HTML authoring, SQL and relational database systems with experience in World Wide Web–accessible database design and management. For consideration, please send résumé to: **Mark C. Fishman, M.D., Director, Cardiovascular Research Center, Massachusetts General Hospital, 149 13th Street, MC149-4201, Charlestown, MA 02129. FAX: 617-726-5806.** *We are an Equal Opportunity Employer committed to work force diversity. Equal Opportunity Employer/Affirmative Action.*

HEMATOLOGY/ONCOLOGY SECTION LABORATORY OF CLINICAL INVESTIGATION

The NIA's Laboratory of Clinical Investigation is searching for a **STAFF CLINICIAN** to work in the Hematology/Oncology Section. The candidate sought will develop a clinical research program in the biology and treatment of cancer in an aging population. In addition, the ability to identify opportunities to translate the laboratory findings into patient-oriented research is highly desirable. An individual who has demonstrated the ability to maintain a vigorous peer-reviewed research effort is appropriate. Candidates should hold the M.D. or M.D.-Ph.D. degrees, appropriate postdoctoral training, and at least five years in directing a clinical research program.

Applicants should submit a curriculum vitae, bibliography, a detailed statement of research interests, select publications, and three letters of recommendation. This information should be sent to: **Ms. Teri Niebuhr, Attention Vacancy #AG-99-19(GRC), Personnel Office, 5600 Nathan Shock Drive, Baltimore, MD 21224.** All applications must be postmarked by June 7, 1999.

NIA is an Equal Employment Opportunity Employer.

POSITIONS OPEN

CLINICAL DIRECTOR

The National Institute of Dental and Craniofacial Research (NIDCR) is inviting applications for the position of Clinical Director. The incumbent is responsible for all patient-related activities in the NIDCR intramural program, serves as a representative for NIDCR with the NIH Clinical Center, advises the Scientific Director and the Institute Director in the planning and development of a clinical research portfolio, and provides direction to all clinical intramural programs and activities (training and research). The Clinical Director assumes a leadership role in clinical research and training. The Clinical Director provides leadership to the development and administration of NIDCR clinical training programs, oversees the Clinical Research Core Facility, and administers quality assurance programs for all clinical research and patient-related activities. In addition, he/she acts as liaison to senior and junior clinical staff and the public.

Qualifications for this position include a D.D.S., D.M.D., and/or M.D. degree. The successful candidate must have a national/international reputation as an exceptional Clinical Scientist and be prepared to establish an independent clinical research program within NIDCR. In addition, the candidate must have demonstrated administrative and mentoring skills.

Interested candidates should send a cover letter, curriculum vitae, bibliography, and three letters of reference to: **Ms. Judy Dulovich, NIH/National Institute of Dental and Craniofacial Research, Human Resources Management Branch, 31 Center Drive, Building 31, Room 2C39, MSC-2290, Bethesda, MD 20892-2290.** Applications will be accepted through June 30, 1999. *The National Institutes of Health is an Equal Opportunity Employer.*

The National Human Genome Research Institute (NHGRI), National Institutes of Health (NIH), Bethesda, Maryland is seeking a **STAFF SCIENTIST** to direct a new Microarray Technology Core Facility. The position will provide an opportunity to be involved in all phases of microarray investigations, including the establishment and maintenance of sequence-verified clone sets, microarray printing, and the scanning and image processing of these microarrays. The incumbent will also be involved in the development and utilization of computational approaches for the management and analysis of microarray data. Applicant must have a strong background in molecular biology and technology development. Extensive experience in the field of differential gene expression, with particular emphasis on microarray technologies, is required. Candidates must have an advanced degree with at least two years of previous postdoctoral experience. Applications must include curriculum vitae and bibliography, letter of interest indicating related experience, and three letters of reference. The completed application should be received by May 21, 1999, and sent to: **Ms. Carol Penberthy, National Human Genome Research Institute, National Institutes of Health, Building 49, Room 4A-22, Bethesda, MD 20892-4470.** *NIH is an Equal Opportunity Employer.*

RESEARCH SPECIALIST IN MR UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

A Senior Research Specialist in health sciences is needed to manage a laboratory and participate in NMR spectroscopy and imaging research on living cells, tissues, animals, and humans. Duties include responsibility for instrumentation, as well as teaching and assistance to undergraduate, graduate, and postdoctoral students. An M.S. degree in an appropriate scientific or engineering field and two years of research laboratory experience is required, Ph.D. preferred. This is a full-time, 12-month academic professional appointment. Salary commensurate with experience. Send résumé and names, addresses, telephone and FAX numbers, and/or e-mail addresses of three references by June 1, 1999, to: **Prof. Joan Dawson, Department of Molecular and Integrative Physiology, 524 Burrill Hall, 407 South Goodwin, Urbana, IL 61801.** *The University of Illinois is an Affirmative Action/Equal Opportunity Employer.*

THE STATE UNIVERSITY OF NEW JERSEY
RUTGERS

Faculty Position in New Use Agriculture and Value-Added Crops

Position: Tenured Professor in New Use Agriculture

Responsibilities:
- Provide world-class leadership in research, teaching, and outreach in the multi-disciplinary field of new use agriculture and value-added crops.
- Establish and maintain coordination of innovative initiatives directed to added-value agricultural crops, involving the partenering of farmers and farm organizations, the University, State and Federal agencies, and allied food and pharmaceutical industries to contribute to profitable farming operations in the region.
- Collaborate with multiple disciplines and related initiatives.
- Take leadership in securing funding.

Qualifications: Ph.D. in agronomy, phytochemistry, plant breeding, plant molecular biology, or related discipline and at least 10 years experience in the agronomic, horticultural and chemical aspects of natural products. An outstanding level of accomplishment is expected in research, teaching and outreach, with experience in agriculture extending from the seed through crop management to development and marketing of new products. Experience working at the farmer/academic/industry interface is a priority, as is ability to work with researchers in multiple disciplines.

Applications: Send letter of application, complete resume and academic transcripts to:

Cook College Office of Personnel
88 Lipman Drive
New Brunswick, NJ 08901-8525
Attention: Chair, Search Committee for Professor, New Use Agriculture and Value-Added Crops

The Search Committee will commence review of applications beginning June 1, 1999 and continue until an appropriate candidate is identified.

Rutgers, The State University of New Jersey is an affirmative action/equal employment opportunity employer.

European Opportunities

UCL

UNIVERSITY COLLEGE LONDON
Royal Free and University College Medical School
Department of Medicine

Technical Assistant (Grade D)

The Gene Targeting & Transgenic Core Facility, established recently under the direction of Dr F. Sablitzky, invites applications from highly motivated, pre-doctoral-level individuals, for the post of Technical Assistant (Grade D).

The Technical Assistant will provide full-time technical support for the Post-Doctoral Research Assistant, who has assumed operational responsibility for the Facility.

Applicants must possess a solid grounding in mammalian cell culture. Experience in one or more of: ES cell culture, pronuclear/blastocyst microinjection, and ES cell-mouse embryo aggregation, is highly desirable but not essential.

The appointment is for three years in the first instance, with the potential for renewal. Salary will be in the range £12,867-£16,789 plus £2,262 London Allowance.

Qualified candidates should send their curriculum vitae, plus the names and addresses (including telephone, fax and email) of three referees to: Dr F. Sablitzky, University College London, Windeyer Institute of Medical Sciences, 46 Cleveland Street, London W1P 6DB. Tel.: +44 (0)171 504 9146. Email: f.sablitzky@ucl.ac.uk.

The closing date for applications is Wednesday, 30th June 1999.

Working toward Equal Opportunity

Global Opportunities

UNITED ARAB EMIRATES UNIVERSITY
FACULTY OF MEDICINE AND HEALTH SCIENCES (FMHS)

Exciting opportunities at the FMHS for full-time academic staff as Assistant/Associate/Full Professor or "Teacher" category

Established in 1986 and recently moved into a completely equipped new building, the FMHS provides an integrated problem-oriented undergraduate medical curriculum with English as the medium of instruction. Appointees will join a dynamic team of medical educators, researchers, and support staff who maintain academic balance in medical education, basic science and clinical research, clinical care, and community and university service.

Basic requirements for appointment in Departments of **ANATOMY, BIOCHEMISTRY, MEDICAL EDUCATION, MICROBIOLOGY, PATHOLOGY, PHARMACOLOGY**, and **PHYSIOLOGY:** PhD or MD obtained by research, experience teaching medical students, and research productivity. Basic requirements for appointment in **COMMUNITY MEDICINE, FAMILY MEDICINE, INTERNAL MEDICINE, OBSTETRICS & GYNECOLOGY, PEDIATRICS, PSYCHIATRY, RADIOLOGY** and **SURGERY:** MD or MBBS followed by well-supervised advanced training, higher professional recognition, experience teaching medical students and advanced trainees, research productivity, and understanding of GME accreditation and membership/fellowship/certification in North America, Australia, Europe, and by the Arab Board. Appointees in Basic Science & Clinical Departments will be familiar with USMLE and MCCEE.

The UAE is an open and tolerant society and clearly one of the most attractive places to live and work in the Middle East.

Faculty receive tax-free salary, generous leave, and support for accommodation/furnishings, annual air fares, educational assistance for up to three children, and international conferences.

Further information may be obtained from the web site at http://www.uaeu.ac.ae or Chair of the respective department by tel +971-3-672000 or fax +971-3-672001.

Applications should include full CV and publication list, names/addresses/fax of five referees, and letter indicating position sought, depth of interest, experience, and suitability for the post sent to:

The Dean (c/o Mr C. P. Nair)
Faculty of Medicine and Health Sciences
United Arab Emirates University
P O Box 17666, Al Ain, United Arab Emirates

Applications closed 1 September 1999; previous applicants need not apply.

POSITIONS OPEN

RESEARCH CHEMIST/MICROBIOLOGIST. The U.S. Army Medical Research Institute of Chemical Defense is the lead laboratory in the Department of Defense for research on the development of antidotes against chemical warfare threats. The Institute currently has an opening for a Principal Investigator and team leader in the Pharmacology Division at Aberdeen Proving Ground, Maryland. *Only U.S. citizens may apply.* It is desirable that the candidate demonstrate postgraduate research experience involving the identification, cloning, and expression of wild type or site-directed mutated genes and experience working with proteins that are postulated to have a therapeutic effect *in vivo* against a xenobiotic compound. Job announcement can be found at **website: www.usajobs.opm.gov** or you can **Telephone: 410-306-0080** to request an application package. Initial consideration will be given to those received by May 14, 1999.

RESEARCH POSITIONS

Two positions are available at the Department of Pathology at North Shore University Hospital, Manhasset, New York. We are interested in the biology, function of ebaf, a newly identified member of the TGF-beta superfamily, and the application of these findings in the diagnosis of cancer. The candidates should have either a Master's or Ph.D. and significant experience in molecular biology techniques, including Northern blotting, Western blotting, cloning, transfection, sequencing, site-directed mutagenesis, PCR, two hybrid system, receptor capture, etc. Qualified and interested candidates can e-mail résumé to **e-mail: tabibzadeh@bioscience.org** or **Telephone: 516-562-9417**. The curriculum vitae may be sent to: **S. Tabibzadeh, M.D., Biomedical Research Center, 350 Community Drive, Manhasset, NY 11030.**

DEPARTMENT OF PHYSIOLOGY AND BIOPHYSICS
Case Western Reserve University School of Medicine

Applications are invited for positions as **INSTRUCTORS, RESEARCH ASSOCIATES,** and **POSTDOCTORAL FELLOWS** in the following areas: signal transduction, molecular biology of membrane proteins, structural biology, channel regulation, cell motility, and systems integrated physiology. Send curriculum vitae, a description of research accomplishments and future goals, and the names of three references to: **Administrative Manager, Department of Physiology and Biophysics, 10900 Euclid Avenue, Cleveland, OH 44106-4970.** *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL PROGRAMS IN FUNCTIONAL GENOMICS MOLECULAR MEDICINE AND CELLULAR PHYSIOLOGY
University of Pennsylvania

We offer a multidisciplinary program with a choice of 20-plus laboratories for postdoctoral research. Areas of special interest include cell signaling, and signal transduction, transcriptional and posttranslational regulation, oxygen and CO_2-H^+ sensing, reactive oxygen species, ion channels, and carbonic anhydrase. Trainees are funded by an Institutional NRSAs from the NHLBI (HL07027 and HL07748). Respond to: **Joint NRSA Programs, Susan Turbitt, 1 John Morgan Building, Philadelphia, PA 19104-6068.** Or apply via our **website: http://www.med.upenn.edu/ifem/pep.htm.**

Two **POSTDOCTORAL POSITIONS** are available to study the role of oxidative stress in the aging process of animals. Applicants should have training in biochemistry, preferably in protein chemistry and/or analytical biochemistry with High Performance Liquid Chromatography (HPLC) experience. Contact: **Professor R. S. Sohal, Department of Biological Sciences, Southern Methodist University, Dallas, TX 75275. Telephone: 214-768-2732; FAX: 214-768-3955; e-mail: rsohal@mail.smu.edu.**

POSITIONS OPEN

POSTDOCTORAL SCIENTIST

Conduct molecular genetic analyses of oral cancer and nasopharyngeal carcinoma as part of NIH-funded molecular epidemiology program. We seek a highly self-motivated individual with a M.D. or Ph.D., zero to three years of previous relevant postdoctoral experience, and a strong background in molecular genetic methods. Very highly experienced and well-recommended candidates with M.S. degrees also considered. We are a nonprofit organization providing support services to the military medical community and offer a competitive salary and generous benefits package. Send curriculum vitae to:

Human Resources Department, Attn: #2980256
Henry M. Jackson Foundation
for the Advancement of Military Medicine
1401 Rockville Pike, Suite 600
Rockville, MD 20852
E-mail: hr@hjf.org

Equal Opportunity Employer/Affirmative Action.

POSTDOCTORAL POSITION

Our laboratory investigates cell cycle regulation during normal hematopoiesis and the function of new p53-like molecules. Applicants should have a strong research background with expertise in cell and molecular biology techniques. Please send curriculum vitae, a summary of previous research, and three letters of reference to:

Richard A. Steinman, M.D., Ph.D.
Department of Medicine
E1052 BST
University of Pittsburgh Cancer Institute
Pittsburgh, PA 15213

POSTDOCTORAL POSITION available to study the structure and function of the CCA-adding enzyme (tRNA nucleotidyltransferase), the only enzyme that synthesizes a specific nucleotide sequence without using a nucleic acid template. Our biochemical studies are well under way and crystallographic studies have begun. Send curriculum vitae and names of three references to: **Dr. Alan M. Weiner** or **Dr. Nancy Maizels, Department of Molecular Biophysics and Biochemistry, Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06520-8024 USA. E-mail: alan.weiner@yale.edu** or **nancy.maizels@yale.edu.**

POSTDOCTORAL POSITION
WAKE FOREST UNIVERSITY SCHOOL OF MEDICINE

A NIH-funded Postdoctoral position is available in the Department of Pediatrics beginning in July 1999, to sudy mammalian mitochondrial biogenesis. This project seeks to understand how proteins target and move across mitochondrial membranes. Experience in molecular biology and protein expression is required. Prior experience in mitochondrial analysis is highly desirable. Good verbal and writing skills are also required. Please send curriculum vitae and names/addresses of three references to: **Dr. R. Mark Payne, Wake Forest University School of Medicine, Department of Pediatrics, Mecical Center Boulevard, Winston-Salem, NC 27157-1081.** *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION IN CYTOCHROME P450 RESEARCH

Studies of P450 monooxygenases with the aim of defining the catalytic site of insect P450s responsible for the metabolism of plant furanocoumarins (methoxypsora lens). Experience with molecular biology/biochemistry is necessary. Send curriculum vitae and names of three references to: **Dr. Mary Schuler, Department of Cell and Structural Biology, University of Illinois, 190 ERML, 1201 West Gregory Drive, Urbana, IL 61801. E-mail: maryschu@uiuc.edu.** *UIUC is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

POSTDOCTORAL FELLOWSHIP
M.D. AND/OR PH.D.

Applications are invited for a NIH-funded position of up to three years starting 1 July 1999 to join an established, well-funded, and expanding group investigating intracellular trafficking and regulation of ABC transporters in mammalian liver and their relation to inheritable and acquired liver diseases. Experience in molecular biology, protein-lipid interactions, and transport biology will be advantageous.

Salary is according to NIH guidelines. *Applicants must be U.S. citizens or holders of permanent visas.*

Applications including curriculum vitae and names/addresses of two to three referees should be sent to:

Dr. Irwin Arias, Chairman
Department of Molecular-Cellular Physiology
Tufts Medical School
136 Harrison Avenue
Boston, MA 02111
E-mail: iarias@infonet.tufts.edu

PACIFIC NORTHWEST RESEARCH INSTITUTE

POSTDOCTORAL RESEARCH ASSOCIATE. Renewable two-year position available at dynamic, growing diabetes research institute in Seattle; combines interactive opportunities with University of Washington and lifestyle of Pacific Northwest. Research involves cellular/molecular physiology of signal transduction systems in pancreatic beta cells controlling insulin secretion and mitogenesis: demonstrable commitment and experience in islet/β-cell research strongly preferred. NIH postdoctoral salary supplemented for COL. Send curriculum vitae, goals, and two letters of recommendation: **Dr. Stewart Metz, Pacific Northwest Research Institute, 720 Broadway, Seattle, WA 98122 USA. E-mail: smetz@pnri.org.** Applications close July 1, 1999. Can discuss position with **Dr. Metz** in June 1999 at ADA meetings. *Equal Opportunity Employer.*

POSTDOCTORAL FELLOWSHIP available to work on a newly funded study, in the area of HIV vaccine development. The research seeks to examine whether one can exploit the immunostimulatory properties of a unique SIV Nef allele, to enhance the antigen presenting and costimulatory functions of dendritic cells. The research will include the construction and use of adenovirus vectors, and the analysis of immune responses in animal model systems (mice). Send curriculum vitae and names of three references to: **Dr. Linda Whetter, Department of Microbiology, University of Rochester Medical Center, 601 Elmwood Avenue—Box 672, Rochester, NY 14642. E-mail: linda_whetter@urmc.rochester.edu.**

Three **POSTDOCTORAL POSITIONS** available at the Dana-Farber Cancer Institute, Harvard Medical School, Boston. Position One will identify functional domains of the ATM kinase that are activated following DNA damage. Position Two will examine how ATM-like kinase regulate growth arrest. Both positions require experience in mutagenesis/protein expression/signal transduction. Position Three will utilize a novel method to identify mutations/polymorphisms on a genome-wide scale. Experience in PCR/DNA CHIP technology preferred. Applications, by e-mail, to: **Dr. B. Price, e-mail: brendan_price@dfci.harvard.edu.**

POSTDOCTORAL FELLOWSHIP is available to study the modulation of synaptic plasticity and synaptic physiology related to ethanol and drug exposure in the VTA/accumbens in mouse models. A solid background in electrophysiology is desired. Applicant should have gained an M.D. or Ph.D. Please send curriculum vitae, description of past research, and names and telephone numbers of at least two references to: **Dr. Antonello Bonci, Gallo Research Center, University of California, San Francisco, Building 1, Room 101, 1001 Potrero Avenue, San Francisco, CA 94110. E-mail: bonci@itsa.ucsf.edu; FAX: 415-648-7116; website: http://gallo.ucsf.edu.** *An Equal Opportunity Employer.*

IRCM

Institut de recherches cliniques de Montréal

Laboratory Director Vascular Biology

The Institut de recherches cliniques de Montréal (IRCM) invites applications for the Directorship of a Laboratory in the field of Vascular Biology. Expertise is sought in the areas of endothelial cell biology, smooth muscle biology, vascular inflammation, angiogenesis, or cell adhesion. Candidates must have experience in the development of a strong independent research program or have the ability to develop and/or carry out such a program. Collaboration with other IRCM laboratories involved in hypertension, cardiac hypertrophy, atherosclerosis, or cancer will be valued for the better fostering of a multidisciplinary approach to understanding human disease.

Scientists involved in basic research or in patient-based or disease-oriented research are encouraged to apply. Qualifications must include, at minimum, an M.D. or Ph.D. degree with significant postdoctoral experience. Scientists with an established research program in vascular biology are strongly encouraged to apply.

The IRCM is an independent biomedical research centre affiliated with the Université de Montréal. Our post-graduate students are registered at the Univerisité de Montréal or McGill University.

Located in the centre of Montreal, the IRCM offers a vibrant scientific environment and is an equal opportunity employer. Please send your application including a curriculum vitae and an outline of your research program to:

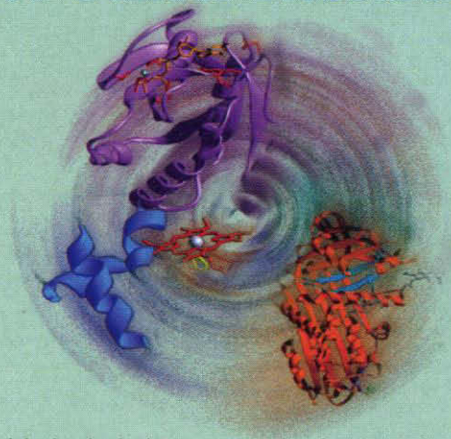
Academic Affairs Department
Institut de recherches cliniques de Montréal
110, avenue des Pins Ouest
Montréal (Québec) H2W 1R7
Fax: (514) 987-5803

For more information on the IRCM, visit our website at www.ircm.qc.ca

EUROPEAN OPPORTUNITIES

Unlocking the Potential.

Both your own and that of Cancer Research.



Pharmacia & Upjohn is a leader in cancer care. Our Oncology Discovery Research Group in Italy has a proud and successful tradition, which is being leveraged to invest in the future. Building from existing strength in cytotoxic drugs, our vision is to radically change the way we treat cancer and the outcome for the cancer patient by targeting specific molecular defects of different tumors providing rational and safe treatment. This unswerving commitment to innovation translates into a number of research projects in fields such as cell cycle regulation, intracellular signaling, angiogenesis, telomerase regulation and novel concepts in immunotherapy. We intend to support these efforts and increase our competitive edge by increasing investments in key technologies such as Mammalian In vitro/In vivo Genetics, Genomics, Bioinformatics, Combinatorial Chemistry and Structural Chemistry. New dedicated resources are now opening opportunities for scientists with excellent backgrounds in these and other disciplines. We are seeking talented people to join our research groups in a multidisciplinary and highly interactive environment. Pharmacia & Upjohn is a global company with global ambitions. We offer competitive salaries, benefits and global career opportunities limited only by your skill, creativity and performance. The Pharmacia & Upjohn R&D Center in Italy is one of the three major R&D sites of the company. It has an excellent location in Nerviano, ten miles northwest of Milan, northern Italy. It currently employs 250 scientists in Discovery Research Oncology and 250 in Pharmacokinetics, Pharmaceutical Sciences and Toxicology.

DEPARTMENT OF PHARMACOLOGY

Cell Biologists/ Molecular geneticists.

We have openings at both the post-doctoral and the senior scientist level for highly qualified and committed scientists to join our teams working on the identification and validation of novel molecular targets in oncology. Successful candidates will be team players with a strong interest and expertise in the areas of cell cycle control, senescence, apoptosis signal transduction, or angiogenesis.

Applicants should possess a Ph.D. in Genetics, Molecular Biology, Biochemistry or Cell Biology and have a proven record of research achievement in either the academic or the industrial environment. Expertise in genetics of model organisms will be considered a plus.

Please send a CV, a description of your research interests, and names and addresses of two referees to: Giulio Draetta, Head, Department of Pharmacology, Discovery Research Oncology, Pharmacia & Upjohn, Viale Pasteur 10, 20014 Nerviano (Milan), Italy.
Informal inquires can be sent directly by fax at: +39.02.4838.3987

No later than June 7, 1999

Pharmacia & Upjohn

WAYNE STATE UNIVERSITY SCHOOL OF MEDICINE

Three **POSTDOCTORAL POSITIONS** are available immediately in the Department of Pathology.

Position 1: To study growth factor signaling and cell-matrix interactions on apoptosis regulation. Strong background in molecular and cellular biology required.

Position 2: To study the regulation of activation of matrix metalloproteinases in cancer. Applicants should have demonstrated experience in enzymology, protein chemistry, and molecular biology. Research involves structure-function studies of enzyme domains, enzyme-inhibitor interactions, kinetic analysis, site-directed mutagenesis, and recombinant protein expression.

Position 3: To study laminin and laminin receptors in development. The project involves generation of knockout mice and requires a solid background in cell and molecular biology.

Qualified applicants should send a curriculum vitae, a brief description of research experience, and three names of references to: **Dr. Hyeong-Reh C. Kim** (position 1), **Dr. Rafael Fridman** (position 2), and **Dr. Lucia Schuger** (position 3), **Department of Pathology, Wayne State University, 540 East Canfield, Detroit, MI 48201. FAX: 313-577-0057.**

Wayne State University is an Equal Opportunity/Affirmative Action Employer. Wayne State University—people working together to provide quality service.

POSTDOCTORAL POSITION VIROLOGY/EXPERIMENTAL MEDICINE HARVARD MEDICAL SCHOOL
Beth Israel Deaconess Medical Center

Postdoctoral positions available to study (1) the biology of gamma herpesvirus (EBV, KSHV) entry and to develop virus-based approaches to tumor therapy.

Recent Ph.D. or M.D. graduates with skills in molecular/cellular biology or biochemistry. Please send curriculum vitae and three references to: **Dr. Joyce Fingeroth, Beth Israel Deaconess Medical Center–HIM 353, 330 Brookline Avenue, Boston, MA 02215. E-mail: jfingero@caregroup.harvard.edu.**

FUNCTIONAL GENOMICS AND GENE THERAPY

A **POSTDOCTORAL POSITION** is open to generate and study transgenic animals carrying mammalian artificial chromosomes (*Nature Genetics* **8**:33; *Nature Biotechnology* **16**:762) using nonviral and herpesviral delivery systems (*Nature Medicine* **1**:1303; *Cur. Op. Genet. Dev.* **8**:351). A background in molecular biology is essential, and knowledge of virology and/or immunology highly desirable. Please send curriculum vitae (with the names of three references) to: **Jean-Micel Vos, Lineberger Cancer Center, CB#7295, University of North Carolina, Chapel Hill, NC 27599.**

POSTDOCTORAL POSITION available in neuroimmunology. The laboratory focuses on abnormal immune-brain interactions and the current ongoing research projects are in multiple sclerosis, schizophrenia, and ALS. Applicants must have extensive experience in molecular and cell biology, and immunology. Send curriculum vitae and three references to: **Dr. Saud A. Sadiq, St. Luke's–Roosevelt Hospital Center, Columbia University, Antenucci Building, 432 West 58th Street, Room 117, New York, NY 10019. FAX: 212-523-8859.** *Equal Opportunity Employer.*

POSTDOCTORAL POSITION available to study macrophage interactions with cells of the endocrine system. Training in natural products chemistry of lipids with experience in HPLC, GC/MS, and NMR would be helpful. Applications from Reproductive Biologists interested in steroidogenesis also welcome. Send curriculum vitae to: **Dr. James C. Hutson, Department of Cell Biology and Biochemistry, Texas Tech Medical Center, 3601 4th Street, Lubbock, TX 79430. E-mail: jim.hutson@ttmc.ttuhsc.edu.** *TTU is an Equal Opportunity Employer.*

POSITIONS OPEN

PREDOCTORAL AND POSTDOCTORAL POSITIONS
Pharmacology and Neuroscience Training in Drug Abuse Research

Predoctoral and Postdoctoral positions are available July 1, 1999, for study of the behavioral, neurochemical, and molecular bases of drug addiction and dependence. These positions are part of a new training program supported by the National Institute on Drug Abuse. Predoctoral Fellows will receive broad training in the biomedical sciences as well as specific training in areas related to drug abuse. Both Pre- and Postdoctoral Fellows will be mentored by one or more of 14 NIH-funded training faculty in fully equipped state-of-the-art laboratories. Postdoctoral candidates should submit a curriculum vitae and three letters of reference. Predoctoral candidates should request an application to our graduate studies program. Contact: **Dr. Stanley D. Glick, Department of Pharmacology and Neuroscience, MC-136, Albany Medical College, 47 New Scotland Avenue, Albany, NY 12208. FAX: 518-262-5799; e-mail: sglick@ccgateway.amc.edu.** *Albany Medical College is an Equal Opportunity/Affirmative Action Employer.*

UNIVERSITY OF PENNSYLVANIA

Three **POSTDOCTORAL** or **RESEARCH ASSOCIATE** positions available immediately. (i) Neurophysiology of single noradrenergic and dopaminergic neurons in locus coeruleus and midbrain in behaving monkeys during performance of cognitive tasks. Strong background in neurophysiology or cognitive psychology required. (ii) Neuroanatomy/neurophysiology of afferent regulation of brain monoaminergic systems in rat. (iii) Behavioral pharmacology of opiate abuse in rats. Successful applicants will join the newly created Laboratory of Neuromodulation and Behavior, an interdisciplinary group using a variety of techniques to study monoaminergic neurons. Send curriculum vitae and names of three references to: **Dr. Gary Aston-Jones, Professor, Department of Psychiatry, University of Pennsylvania, VA Medical Center (151), University and Woodland Avenues, Philadelphia, PA 19104.**

POSTDOCTORAL POSITION. Immediate position available for a Molecular Immunologist Postdoctoral Fellow or Research Instructor, depending on credentials, to study lymphocyte and macrophage signal transduction pathways. Must have a Ph.D. with solid foundation in molecular biology and immunology. Send curriculum vitae and names of three references to: **John B. Barnett, Ph.D., Department of Microbiology and Immunology, P.O. Box 9177, West Virginia University, Morgantown, WV 26506-9177. E-mail: jbarnett@wvu.edu.**

POSTDOCTORAL FELLOWSHIP position available in cellular neurophysiology/neuroanatomy to investigate candidate cellular mechanisms of learning and information processing in the perirhinal cortex and adjacent amygdala. Individuals should send curriculum vitae and references to: **T. H. Brown, Department of Psychology, P.O. Box 208205, Yale University, New Haven, CT 06520-8205. Telephone: 203-432-7008; FAX: 203-432-7009.** *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS are available to characterize protein prenyltransferases and signal transduction in malaria parasites. Requires Ph.D. in biochemistry, molecular biology, or related discipline and interest in molecular parasitology research. Send curriculum vitae and references to: **Dr. Debopam Chakrabarti, Department of Molecular Biology and Microbiology, University of Central Florida, 12722 Research Parkway, Orlando, FL 32826. FAX: 407-384-2062.**

POSITIONS OPEN

POSTDOCTORAL POSITIONS are available as part of the continuing development of the Reeve-Irvine Center for Nervous System Regeneration Research, University of California, Irvine (UCI). The community of scientists at UCI engaged in studies of aspects of nervous system regeneration are listed below. Stipend levels are competitive.

Susan Bryant: Molecular mechanisms of nerve requirement for vertebrate limb regeneration; **Anne Calof**: Molecular regulation of neuronal stem cell proliferation and differentiation, *in vitro* and in transgenic model systems; **Carl Cotman**: Mechanisms of axonal degeneration via local apoptosis and inflammatory mechanisms in the recovery from spinal cord injury; **Christine Gall**: Neurotrophic factor regulation and involvement in reactive axonal growth and plasticity; **Ranjan Gupta**: Schwann cell regulation of chronic nerve compression injury; **Arthur Lander**: Molecular mechanisms of axon growth and growth-inhibition; transgenic and gene-knockout approaches; **Vernon W. H. Lin**: Spinal cord plasticity and repair strategies, functional electric and magnetic stimulation; **Ronald Meyer**: Optic nerve regeneration; axonal interactions with glia and extracellular matrix; **Richard T. Robertson**: Mechanisms of target selection of regenerating central axons; **Oswald Steward**: Genetic modulation of regeneration, synapse growth, and plasticity; **John H. Weiss**: Excitatory amino acid physiology, and cellular mechanisms of neurodegeneration and neuroprotection.

Applications should include a curriculum vitae, list of publications, a brief summary of training goals, and names and addresses of at least three individuals who can provide letters of recommendation. Applications may be sent directly to one of the participating faculty or to the address below.

Reeve-Irvine Postdoctoral Search
University of California College of Medicine
Irvine, CA 92697-1275

Applications should be received by June 1, 1999. *UCI is an Equal Opportunity Employer, committed to excellence through diversity.*

POSTDOCTORAL RESEARCH ASSOCIATE

Postdoctoral position available to study cytokines, chemokines, and cellular mechanisms in the ocular pathogenesis of *Pseudomonas aeruginosa* in rats. Requirements: molecular biology, immunology, and small animal handling.

Send letter of research background and goals and names of three references to: **Dr. Linda D. Hazlett, Professor and Chair, Department of Anatomy and Cell Biology, Wayne State University School of Medicine, 540 East Canfield Avenue, Detroit, MI 48201. E-mail: lhazlett@med.wayne.edu.**

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

POSTDOCTORAL POSITION YALE UNIVERSITY SCHOOL OF MEDICINE

To study recombination in mammalian cells, using biochemical and genetic approaches. Please send curriculum vitae, statement of research interests and accomplishments, and three letters of reference to: **Dr. Nancy Maizels, Department of Molecular Biophysics and Biochemistry, Yale Medical School, 333 Cedar Street, New Haven, CT 06520-8024. E-mail: nancy.maizels@yale.edu.**

POSTDOCTORAL POSITION available for investigating the molecular mechanisms of vision and retinal disease. Electrophysiological methods will be used to study single cells from transgenic mice. A training program is available for scientists new to vision research. Please send a statement of your research experience and goals, curriculum vitae, and names and addresses of three references to: **Dr. Clint Makino, Department of Ophthalmology, Harvard Medical School, 243 Charles Street, Boston, MA 02114.**

Limagrain Genetics

Molecular Breeding Department of Limagrain Genetics Research

Limagrain Genetics Research, the field crop breeding company of the Limagrain Group, has an opportunity for a **Senior Scientist** in its **molecular breeding department**. The successful applicant will be at the head of this department and will be in charge of the application for markers in maize, wheat and oilseed rape molecular breeding projects.

Duties will include :

- the definition of the general methodology for molecular breeding in collaboration with breeders,
- the identification, development and adaptation of up-to-date molecular, statistical and database tools,
- the supervision of high throughput genotyping activities and data analysis.

The position requires several years experience in molecular genetics and in team management. Excellent communication skills are required.

Please send resume and cover letter (Ref GM21) to: Limagrain Genetics, Mrs. Legoux, BP1, 63720 Chappes, FRANCE. Fax : +33 (0) 4 73 63 40 76
The position is based in Clermond-Ferrand (France).
All applications will be treated in strict confidence.

WORKSHOP

EMBO

EMBO Workshop 1999

"Potential Future Applications in Structural Biology of an X-ray Free Electron Laser at DESY"

Hamburg, Germany July 4 - July 8, 1999

Organisers: Matthias Wilmanns (EMBL), Victor Lamzin (EMBL), Jochen Schneider (DESY/HASYLAB)

The German synchrotron facility DESY is planning a linear collider with an expected center-of-mass energy of 500 GeV and an integrated X-ray Free Electron Laser (XFEL) in the hard X-ray regime around 1 A wavelength, the so called TESLA project. This planned XFEL will offer an utmost inconceivable potential for applications in biology that are not feasible with current facilities.

The aim of this workshop is to discuss putative applications in structural biology, by reflecting the current frontiers and by evaluating the excepted properties of the planned XFEL for novel and future applications.

Sessions (chairs):

(1) The TESLA project with an integrated XFEL (J.Schneider, Hamburg)
(2) Time resolved crystallography in the fsec range (H.D. Bartunik, Hamburg; I. Schlichting, Dortmund)
(3) Novel phasing methods in diffraction (P.Gros, Utrecht)
(4) New frontiers in biocrystallography (Z. Dauter, Brookhaven)
(5) Spectroscopy Applications (W. Meyer-Klaucke, Hamburg; L. Troeger, Hamburg)
(6) X-ray microscopy and non-periodic structures (G. Margaritondo, Lausanne/Trieste)
(7) Radiation damage (C. Kratky, Graz; P. Tucker, Hamburg)
(8) Holographic Methods (G. Materlik, Hamburg; A. Szöke, Livermore)
(9) Data recording (nn.)
(10) Topological imaging (V. Lamzin, Hamburg; Van Heel, London)

The deadline for applications: June 1, 1999.

Registration fee: DM 250 (including accommodation and meals). Applicants from Central and East European countries might be exempted. Participants are strongly encouraged to present their own results by poster or by short oral presentation.

For further information see:

http://www.embl-hamburg.de/ExternalInfo/xfel99/index.html
or write to XFEL99, EMBL c/o DESY, Notkestrasse 85, D-22603 Hamburg, Germany.

THE UNIVERSITY OF GRONINGEN THE NETHERLANDS

The Faculty of Natural Sciences and Mathematics invites applicants for the position of

Full Professor Ecophysiology of Plants

in the Centre for Ecological and Evolutionary Studies.

The University of Groningen seeks candidates with the drive to establish a strong research program on whole-plant-physiology, with a strong emphasis on the analysis of adaptation mechanisms. The candidate should be internationally recognized and should have the ability to lead a research group and to teach undergraduate and advanced courses in plant physiology and ecophysiology.

Although inspired by an evolutionary and ecological framework, the research questions tackled within the group embrace physiological, biochemical and biophysical approaches and are pursued down to the level of processes within the cell. The laboratory of Plant Physiology cooperates closely with the laboratories for Plant Ecology and Molecular Plant Biology, and is embedded in the Centre for Ecological and Evolutionary Studies, and participates in the National Graduate School of Functional Ecology.
The teaching of inspiring courses is such an essential aspect of the position that a professor may be asked, if necessary, to attend relevant didactic courses. The candidate must be willing to carry a fair share of administrative duties.

The salary will be between Dfl 8.310,- and Dfl 12.182,- gross per month.

Further information can be obtained from Prof.Dr. J. van Andel, phone + 31 50 3632224 / 3632281; fax:+31 50 3632273; e-mail <j.van.andel@biol.rug.nl>

Applications in the form of letter, enclosing a curriculum vitae, should be sent to the Head of the Personnel Department, University of Groningen, P.O. Box 72, 9700 AB GRONINGEN, The Netherlands. Please mark the envelope in the upper left hand corner with the vacancy number 990150. The closing date for applications is May 26, 1999.

POSITIONS OPEN

POSTDOCTORAL POSITIONS available immediately at the University of California, Irvine (UCI) to study molecular mechanisms of neuroplasticity. Separate positions available to study (1) the activation of LTP-related neurochemistries (proteolytic activity, neurotrophin expression, immediate early gene expression) during learning behavior; (2) mechanisms through which the integrin adhesion receptors influence functional synaptic plasticity (LTP) and regulate adult neuronal gene expression; and (3) aging-related changes in cytokine/neurotrophic factor expression by glial cells in association with lesion-induced axonal growth. Research to be conducted in new facilities and in close collaboration with other Investigators on the UCI campus. Studies employ hippocampal explant culture, *in situ* hybridization, immunocytochemistry, confocal microscopy, image analysis, learning paradigms. Experience in molecular neurobiology, signal transduction, or neuroanatomy a plus. Starting stipend is $29,112 plus benefits. Please send curriculum vitae and names for three letters of reference to: **Christine M. Gall, Ph.D., Department of Anatomy and Neurobiology, University of California at Irvine, Irvine, CA 92697-4292. FAX: 949-824-1255; e-mail: cmgall@uci.edu.** *The University of California is an Equal Opportunity Employer committed to excellence through diversity.*

POSTDOCTORAL FELLOWSHIPS AVAILABLE AT SLOAN-KETTERING INSTITUTE

Seeking scientists with background and interest in defining the effects of signal transduction pathways, cell cycle control, or protein-protein interactions on the function of AML1 or ETS transcription factors in normal and leukemic cell survival and proliferation. Applicants with expertise using animal models to study hematopoiesis are encouraged to apply. A description of your research interests, curriculum vitae, and the names and telephone numbers of three references should be sent to: **Dr. Stephen D. Nimer, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, Box 575, New York, NY 10021.**

Mayo Clinic. Clinical chemistry **POSTDOCTORAL FELLOWSHIPS**. Seeking applicants for two-year ComACC-approved Fellowship directed toward qualified individuals (Ph.D. or M.D. required) pursuing careers in clinical chemistry. Individuals completing the program are eligible for certification by the American Board of Clinical Chemistry. Applications on file by October 31, 1999, will be considered for appointment beginning in July 2000. Contact: **Thomas P. Moyer, Ph.D., Division of Clinical Biochemistry and Immunology, Mayo Clinic, Rochester, MN 55905** for more information. *Mayo Foundation is an Affirmative Action/Equal Opportunity Employer and Educator.*

POSTDOCTORAL POSITION to study the relationship between cholesterol metabolism and neurodegeneration using transgenic mouse model of Niemann Pick type C disease. Individual must have Ph.D. and/or M.D., experience with molecular/cell biology, and *U.S. citizenship or permanent residency*. Send curriculum vitae and names of three references, with their e-mail/FAX to: **Dr. D. C. German, University of Texas Southwestern Medical School, 5323 Harry Hines Boulevard, Dallas, TX 75235-9070. E-mail: dwight.german@email.swmed.edu; FAX: 214-648-2281.** *UTSW is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION is available immediately to study functions of cell junctions in signal transduction and growth regulation, using *Drosophila* as a model system. Ongoing research focuses on the functions of the Neurofibromatosis 2 tumor suppressor, Merlin, in regulating cell proliferation. Applicants must have a Ph.D. in biology with a strong background in molecular biology and genetics. Please send a curriculum vitae and names/addresses of three references to: **Richard Fehon, Ph.D., DCMB Group, Duke University, Durham, NC 27708-1000. E-mail: rfehon@duke.edu.**

POSITIONS OPEN

INTERESTED IN CLINICAL OR POSTDOCTORAL RESEARCH TRAINING?

The National Institutes of Health has both! For more information, visit our website which lists an array of clinical and postdoctoral opportunities, including tenure-track positions.
http://www.training.nih.gov
The NIH is an Equal Opportunity Employer.

POSTDOCTORAL AND RESEARCH INVESTIGATOR POSITIONS CENTER FOR GENE THERAPY
University of Michigan

Positions are open to join studies of gene therapy for muscular dystrophy. The focus is on adenoviral vector modification for delivery of large genes to muscle, with an emphasis on helper-dependent adenoviral vectors, development of muscle-specific viruses, and optimization of delivery methods. The Research Investigator position is to assist with human clinical trials of gene therapy for muscular dystrophy and to oversee a helper-dependent Ad vector core facility. Applicants should have experience in molecular biology, molecular genetics or virology, and a strong publication record. A summary of research experience and interests, a curriculum vitae, and the names of three references should be sent to: **Dr. Jeffrey S. Chamberlain, Interim Director, Center for Gene Therapy, Department of Human Genetics, University of Michigan Medical School, Ann Arbor, MI 48109-0618. E-mail: chamberl@umich.edu; website: http://hg-nucleus.hg.med.umich.edu/Labs/Chamberlain/.**

A **POSTDOCTORAL POSITION** is available in the Laboratory of Molecular Microbiology of the National Institute of Allergy and Infectious Diseases (NIAID) at NIH to study the replication, disease-inducing properties, and immune responses of lentiviruses following infection of subhuman primates. A qualified candidate will have the unique opportunity to combine previous training in molecular biology, virology, and immunology to address fundamental questions pertaining to viral pathogenesis and vaccine development. Applicants should have a Ph.D. and/or M.D. as well as zero to five years of postdoctoral experience.

The position is available immediately for a duration of two to five years. Starting salary is dependent on previous experience and qualifications.

Applicants are requested to submit a curriculum vitae and the names and addresses of three references to: **Dr. Malcolm Martin, Laboratory of Molecular Microbiology, NIAID, NIH, Building 4, Room 315, 4 Center Drive, MSC 0460, Bethesda, MD 20892-0460. FAX: 301-402-0226.**
NIH is an Equal Opportunity Employer.

POSTDOCTORAL FELLOW

Research laboratory at the Department of Medicine, Brigham and Women's Hospital/Harvard Medical School seeking Postdoctoral Fellow to work on projects involving molecular biology. Technical expertise in RNA and DNA isolation techniques, PCR, frame shift assays, nuclear run-on techniques preferred. Send curriculum vitae to: **Dr. Edward Ingenito, Pulmonary and Critical Care, Brigham and Women's Hospital, 75 Francis Street, Boston, MA 02115. FAX: 617-732-7421.** *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION at University of California Davis to study endothelial cell bology and pulmonary hypertension (ref.: *Am. J. Resp. Cell. Mol. Biol.* **19**:129–142, 1998). Expertise in cell cycle and apoptosis, experience in confocal microscopy, and English proficiency are preferred. E-mail or mail curriculum vitae to: **VM: Pathology, University of California Davis, Davis, CA 95616. E-mail: dwwilson@ucdavis.edu.**

POSITIONS OPEN

GEORGETOWN UNIVERSITY MEDICAL CENTER
DEPARTMENT OF RADIATION MEDICINE
Laboratory of Experimental Carcinogenesis

POSTDOCTORAL POSITIONS available to study the role of normal and mutated forms of the *cph* oncogene (*Oncogene* **18**:689–701, 1999) in the genetic regulation of cell growth and proliferation of normal and malignant human mammary cells. The positions are funded through 2003 by the National Cancer Institute, and will be available on or about September 1, 1999. Candidates should have laboratory experience in cellular and molecular biology/biochemistry, with less than five years of postdoctoral training. The positions have training potential in the areas of transgenic mice, microarray gene expression analysis, and gene therapy protocols. Salary is negotiable depending on level of experience. Send curriculum vitae, a brief description of research experience, and names and contact information of three references to: **Dr. V. Notario, Georgetown University Medical Center, The Research Building, Room E215A, 3970 Reservoir Road N.W., Washington, DC 20007.** Deadline for applications is July 1, 1999. *Georgetown University is an Equal Opportunity/Affirmative Action Employer.*

A **POSTDOCTORAL POSITION** in X-ray crystallography is available in the NIAID, NIH to study the structure and function of cell surface receptors involved in immune system function. The particular project involves crystallization and structure determination of a Fc gamma receptor in complex with ligand Fc. In addition to our in-house X-ray diffraction facility, the laboratory also has access to a dedicated synchrotron source at Brookhaven. The starting salary is from $27,500 to $34,000 depending on experience. Interested candidates should send curriculum vitae to: **Peter D. Sun, Ph.D., National Institute of Allergy and Infectious Diseases, NIH, 12441 Parklawn Drive, Room 111, Rockville, MD 20852. FAX: 301-402-0284; e-mail: sun@magenta.niaid.nih.gov.** *NIH is an Equal Opportunity Employer.*

NIH-supported **POSTDOCTORAL POSITIONS** are available to study the transcriptional regulation of hepatic transporter genes. Ongoing projects include (1) characterization of the molecular mechanisms mediating downregulation by cytokines (*JCI* **101**:2092, 1998); and (2) coordination of transporter gene regulation by shared factors. Applicants must be experienced in molecular cell biology. *U.S. citizenship or permanent residency encouraged.* Send a curriculum vitae with three references to: **Saul J. Karpen, M.D., Ph.D., Department of Pediatrics, Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06520. FAX: 203-737-1384; e-mail: saul.karpen@yale.edu.** *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION in cancer research available immediately to study the regulation of genes involved in anticancer drug action and resistance. A Ph.D. and a strong background in molecular biology are required, as is familiarity with mammalian and yeast cell culture techniques. Send a letter providing a brief synopsis of research experience and interests, a current curriculum vitae, and at least three references to: **William T. Beck, Ph.D., Department of Molecular Genetics, University of Illinois at Chicago, M/C 569, 900 South Ashland Avenue, Chicago, IL 60607.** *The University of Illinois at Chicago is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION. Johns Hopkins Medical School. Seeking Biologist to join interdisciplinary laboratory using novel microfabrication technologies to investigate signaling pathways regulated by cell-matrix interactions in cancer (**Chen et al,** *Science* **276**:1425–1428, 1997). Significant experience in mammalian cell culture, fluorescence microscopy, Westerns, RT-PCR, and cell transfection a plus. Send curriculum vitae and cover letter to: **Dr. Christopher S. Chen, Johns Hopkins School of Medicine, 720 Rutland Avenue, Traylor 710, Baltimore, MD 21205. E-mail: cchen@bme.jhu.edu.**

DIRECTOR, MRC BIOSTATISTICS UNIT

MRC
Medical Research Council

The Medical Research Council invites applications from scientists of exceptional ability and international standing in the field of biostatistics to succeed Professor Nicholas Day on his forthcoming retirement as Director of the MRC Biostatistics Unit.

This is one of the premier worldwide posts in biostatistics.

Based in Cambridge, the Unit comprises a number of world class biostatisticians regarded as leaders in their own fields. Collectively, they are renowned for their pioneering work in advancing statistical methods and applying them to important problems in biomedical research. Extensive collaborative contacts have been established with Cambridge University scientists and with other national and international research groups. The Unit is well placed to capitalise on new initiatives in Cambridge, for example in public health, clinical research and genetics.

As Director, you will be responsible for defining the overall Unit strategy and for leading a team of over 30 staff. You will direct and organise, on a broad front, research ranging from biostatistics through to quantitative research on human health and disease. Continuation of your own research programme will be strongly encouraged and, as an MRC Director, you will be expected to contribute to the development of corporate MRC strategy.

The Director will have made a significant contribution to biostatistics research or related fields, be able to combine scientific research skills with good strategic vision and have the ability to lead a high calibre team, promoting interaction between researchers.

For further information and to discuss your interest in strict confidence, please contact

Dr Kevin Young, Euromedica plc. 7 Heron Quays, Docklands, London E14 4JB. UK
Telephone 44-(0)171 536 7950. Fax 44-(0)171 538 8362. E-mail: kevinyoung@euromedica.com

The Wellcome Trust
Research Funding for Cardio/Cerebrovascular, Diabetic, Psychiatric and other Noncommunicable Diseases

The Wellcome Trust is pleased to support a programme of research in **Noncommunicable Diseases in developing and restructuring countries**. The Trust recognises the increasing importance of such diseases, consequent upon rapid social and economic change, and particularly invites proposals which address the implementation of research findings into health policy and practice in the long term.

Scope of Initiative

This scheme is directed at research into noncommunicable diseases in **the context and setting of the population of a developing or restructuring country**. Proposals dealing with all aspects of noncommunicable diseases can be considered, including psychiatric illness, cardio/cerebrovascular diseases, diabetes, tobacco and alcohol related diseases, cancer, as well as injury-related research, and nutrition based disorders.

Eligibility

Investigators in developing and restructuring countries can apply either separately or in collaboration with United Kingdom (UK)-based investigators, while UK-based researchers can apply with appropriate collaborators. Applicants must hold an established post in an eligible university or research institute in an eligible country, or in a university in the UK or Irish Republic.

Funding

Two types of funding are available under this initiative: **Project Grants** for up to five years or **Research Training Fellowships**. The fellowships are intended to *assist junior investigators from developing and restructuring countries* to develop research careers in noncommunicable diseases in their home countries; candidates should normally hold, or expect to obtain, a PhD degree, or be medical graduates with equivalent research experience (up to six years' postgraduate). Applications for both types of funding will be considered throughout the year.

Preliminary applications to the Trust should include: an outline of the proposed research, *curricula vitae* for the principal investigators, an approximate budget, and, for the fellowships, letters of support from the institutions in which they propose to work, both in their home country and in the country where they will obtain their training.

Further details about the initiative and eligibility can be obtained from: **The Grants Section (Tropical), The Wellcome Trust, 183 Euston Road, London NW1 2BE, UK. Tel: 0171 611 7236; Fax: 0171 611 7288 or E-mail: tropical@wellcome.ac.uk**

Information is also available on the Trust's web site: www.wellcome.ac.uk

THE WELLCOME TRUST

The Wellcome Trust is a Registered Charity, No. 210183, and seeks to support research in biomedical sciences and the history of medicine by means of grants and other activities

POSITIONS OPEN

BIOGERONTOLOGY AND MOLECULAR EVOLUTIONARY BIOLOGY

POSTDOCTORAL POSITION. NIH-supported investigation with respect to aging and single nucleotide polymorphisms at the heat shock protein and superoxide dismutase genes of *Drosophila melanogaster*. Project involves analyses of natural polymorphisms, demographic and functional measure of senescence and stress response. Experience with sequence polymorphism detection techniques and *Drosophila* genetics. Salary based on experience and qualifications.

Submit curriculum vitae, name, telephone number and e-mail addresses of three references to: **Dr. Marc Tatar and Dr. David Rand, Brown University, Box G-W, Providence, RI 02912. Telephone: 401-863-2100; e-mail: marc_tatar@brown.edu.** Applications received by June 15, 1999, will be assured full consideration. *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION

Cedars-Sinai Medical Center's Burns and Allen Research Institute has a position available for a Postdoctoral Researcher in the Autoimmune Disease Unit. This position will study the molecular of autoimmune thyroid diseases (Graves' disease and Hashimoto's thyroiditis). Experience with molecular biology and cellular techniques is preferred. *Candidate must be a U.S. citizen or permanent resident.* Cedars-Sinai Medical Center is affiliated with UCLA School of Medicine and offers an attractive compensation and benefits package. Please send curriculum vitae and the names of three references to: **Philip Sinclair, Staffing Coordinator, 8723 Alden Drive, SSB-130, Los Angeles, CA 90048-1865. FAX: 310-360-1642; e-mail: sinclairp@cshs.org.** *Equal Opportunity Employer/ Affirmative Action.*

POSTDOCTORAL POSITIONS to study intestinal T lymphocyte/mast cell localization and function in animal models of infection or inflammation. Assays: cytokine production, adhesion, chemotaxis, flow cytometry, and tissue staining. Experience in cellular immunology, molecular biology, or cell biology required. Send curriculum vitae, and three letters of reference to: **Christina M. Parker, M.D., Brigham and Women's Hospital, Division of Rheumatology, Immunology, and Allergy, Smith Building, Room 552B, 1 Jimmy Fund Way, Boston, MA 02115. FAX: 617-525-1010; e-mail: cparker@rics.bwh.harvard.edu.**

POSTDOCTORAL POSITION available to apply near-field microscopy to the study of the organization of the cytoskeleton as well as to investigations of ion fluxes and exocytosis. The successful candidate should have a background in cell biology and confocal microscopy with preference to those with additional experience in scanning probe microscopy. Please submit applications to: **Dr. P. G. Haydon, Department of Zoology and Genetics, Room 339 Science II, Iowa State University, Ames, IA 50011 USA. E-mail: pghaydon@iastate.edu.**

POSTDOCTORAL POSITIONS available immediately at the National Institutes of Health in Phoenix, Arizona to study the molecular basis of susceptibility to type 2 diabetes, obesity, and related phenotypes. This includes gene identification and expression and mutation screening. Experience in molecular biology, genetics, and cell culture preferred. Send curriculum vitae and list of references to: **Dr. Paska Permana, CDNS/NIH, 4212 North 16th Street, Phoenix, AZ 85016. FAX: 602-200-5335.**

POSTDOCTORAL POSITIONS. Available immediately. (1) Myotonic dystrophy, FcRB studies; biochemistry, genetics, molecular biology bgd. (2) Murine tumor models in anticancer T cell gene therapy: adhesion molecule bgd a plus. (3) Molecular immunology breast cancer: expression libraries, phage display, differential display, protein chemistry. Send curriculum vitae, reference names by FAX to: **Dr. R. Junghans, Harvard Medical School, FAX: 617-432-7007.**

POSITIONS OPEN

STANFORD UNIVERSITY SCHOOL OF MEDICINE

One **POSTDOCTORAL POSITION** is available immediately for the highly motivated individuals to study transcriptional control in tumor development. A recent Ph.D. degree with strong background in molecular biology is required. Prior experience in DNA-protein interactions, yeast two-hybrid system, and protein biochemistry is highly desirable. We provide fruitful research environment and competitive salary and fringe benefit. Send curriculum vitae and the names of three references to: **Dr. Z. J. Sun, c/o Homer Abaya, R135, Department of Surgery and Genetics, Stanford University Medical School, Stanford, CA 94305.**

COURSES & TRAINING

CARDIOVASCULAR PATHOPHYSIOLOGY FOR ENGINEERS AND SCIENTISTS

A one-week intensive course sponsored by the Massachusetts Institute of Technology, June 7–11, 1999, Cambridge, Massachusetts. **Dr. Richard J. Cohen**, Program Director. Basic principles of cardiovascular physiology, cardiovascular medicine, diagnostic and therapeutic technologies. Contact: **Director of the MIT Summer Session, Telephone: 617-253-2101; website: http://web.mit.edu/professional/summer.**

UCLA CANCER GENE MEDICINE TRAINING PROGRAM

This Program will train M.D. and Ph.D. Postdoctoral Scientists in clinical and basic research in cancer gene medicine. *The Program is open to U.S. citizens and permanent residents.* Awards will be made normally for two years.

Further information and application forms are at **website: http://genemed.ucla.edu; e-mail: eleon@surgery.medsch.ucla.edu.**

GLOBAL OPPORTUNITIES

GROUP LEADER POSITIONS ON BIOLOGICAL SCIENCES
Shanghai Institutes for Biological Sciences

The Shanghai Institutes for Biological Sciences (SIBS) was recently established on the basis of Shanghai Institute of Biochemistry, Shanghai Institute of Cell Biology, Shanghai Institute of Materia Medica, Shanghai Institute of Physiology, Shanghai Institute of Plant Physiology, Shanghai Brain Research Institute, Shanghai Institute of Entomology, and Shanghai Research Center of Biotechnology of the Chinese Academy of Sciences (CAS). The formation of SIBS represents a major endeavor of reorganization of biological research in CAS, which includes changing infrastructure, increasing funding, and improving living and working condition of researchers. The SIBS is now looking to fill up to 20 positions of Group Leader (equivalent to positions of Program of Hundred Talents of CAS) in molecular biology, cell biology, neuroscience, genomics, bioinformatics, biotechnology, pharmaceutical sciences, and other biological research areas. The SIBS will provide a package including excellent salary, benefits, research space, and start-up funds.

Applicants should have a Ph.D. or equivalent in an academic field, and at least two years of postdoctoral experience in the above-mentioned research areas. Interested candidates should submit a curriculum vitae, summary of research accomplishments, a research proposal (two to four pages), and three letters of recommendation by July 15, 1999, to:

Dr. Chien-ping Wu
Shanghai Institutes for Biological Sciences and Shanghai Brain Research Institute
Chinese Academy of Sciences
320 Yue-Yang Road
Shanghai 200031 China
Telephone: +86-21-64746121
E-mail: cpwu@iris.shlc.ac.cn

POSITIONS OPEN

POSTDOCTORAL POSITION in biological oceanography of Glacier Bay, Alaska. Successful candidate will characterize the spatial and seasonal variation in oceanography of a glacial fjord with new and archived data. The candidate will be part of a research team to investigate the relationship between oceanographic parameters and the distribution/abundance of small schooling fish, marine mammals, seabirds, and benthic organisms. Send curriculum vitae and three letters to: **Dr. S. James Taggart and Dr. Philip N. Hooge, United States Geological Survey, P.O. Box 240009, Douglas, AK 99824.** Deadline is May 31, 1999. Candidate must be available immediately. For additional information contact **e-mail: jim_taggart@usgs.gov.**

POSTDOCTORAL POSITION available immediately for NIH-supported study of mucosal and passive immunity as related to enhancement of the immunogenicity of recombinant enteric viral vaccines in a calf or pig challenge model. Experience in immunology is required with training in molecular virology desirable. Send curriculum vitae and three letters of recommendation to: **Dr. Linda Saif, Food Animal Health Research Program, Ohio Agricultural Research and Development Center, The Ohio State University, Wooster, OH 44691.**

COMPUTER MARKETPLACE

MARKETPLACE

MARKETPLACE

MARKETPLACE

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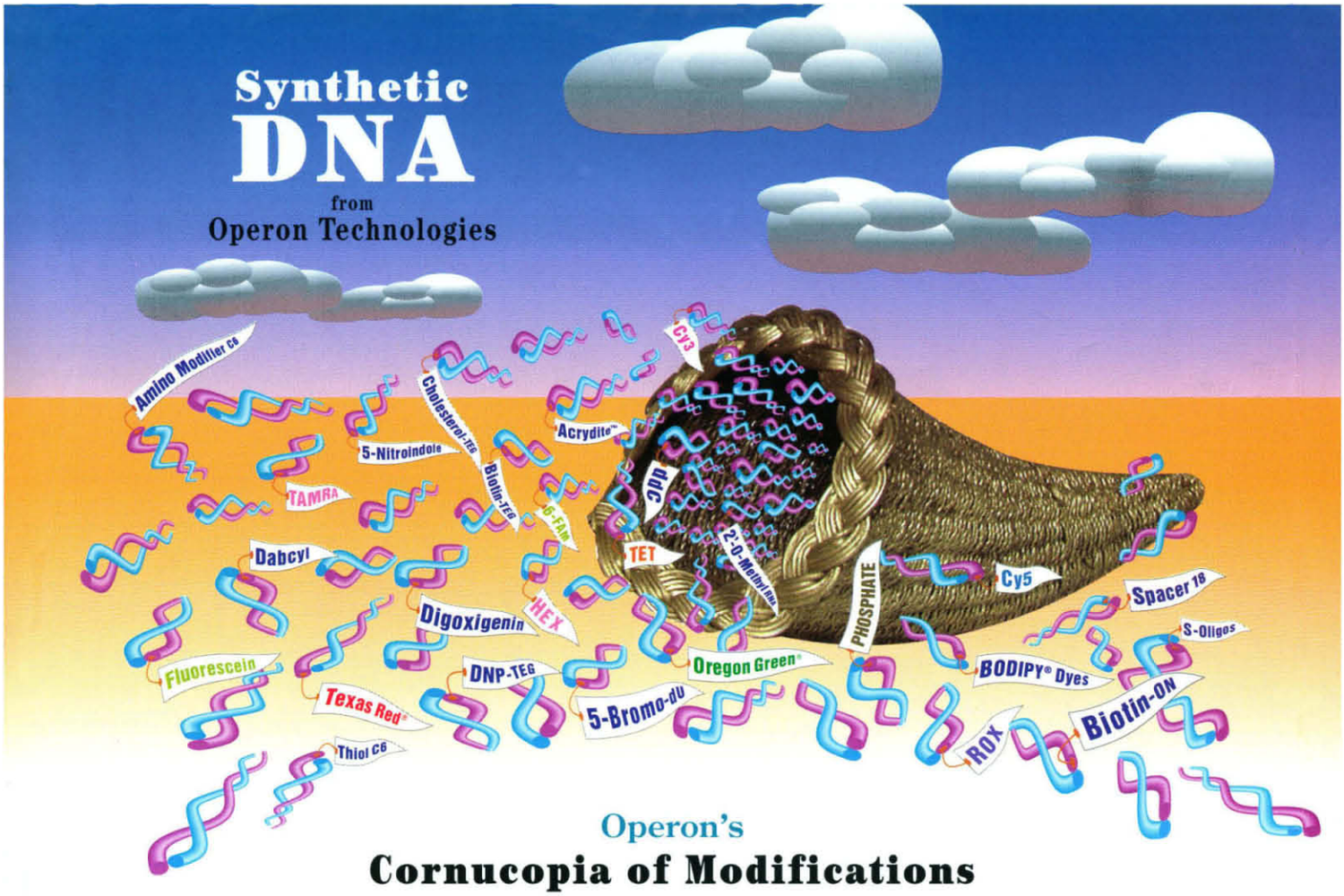

Operon's
Cornucopia of Modifications

Operon Technologies is pleased to offer a cornucopia of modifications available with our custom oligonucleotides. For applications that require fluorescent labels, we offer many dyes, including HEX, TET, 6-FAM, TAMRA, ROX, Cy3, Cy5, Oregon Green®, and Texas Red®. We offer phosphorothioates, propyne derivatives, and 2'-O-Methyl RNA residues which can be used to modify oligos for antisense studies. All commonly modified bases such as deoxyinosine, deoxyuridine, and deoxynebularine, as well as many halogenated bases including 5-bromo-deoxyuridine and 5-iododeoxycytidine are available. We also offer a wide variety of modifications with aminolinkers, biotin labels, and special attachments such as digoxigenin. For a more complete list of possible modifications, please call our customer service department at 800-688-2248 and ask for our catalog.

List Prices for Custom DNA Services

Custom DNA Synthesis Prices

Scale	Price/base	Set-up
0.05 µmole	$0.60	$5.00
0.2 µmole	$1.20	$10.00
1.0 µmole	$2.40	$20.00

(Larger scales available)

Purification Options

Method	Price
Sephadex	free
HPLC	from $30
PAGE	from $45

(Many scales available)

Sequence Modifications

Modification	Price	Modification	Price
Amino Modifier	$25	HEX, TET, 6-FAM	$70
Biotin	$50	Phosphate	$25
Cy3	$70	Oregon Green®	$125
Cy5	$70	ROX	$125
Digoxigenin	$125	TAMRA	$125
Fluorescein	$50	Texas Red®	$125

(Many other modifications available)

OPERON
OPERON TECHNOLOGIES, INC.

World's Leading Supplier of Synthetic DNA

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