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Imaging System

A new imaging system applies two-dimensional imaging technology to area detector systems for analytical x-ray instrumentation applications. It features a fiber-optic-coupled, chargecoupled device that provides high spatial resolution, high sensitivity, and conversion efficiency for the short molybdenum x-ray wavelengths used in measurements of inorganic, organic, and organometallic compounds. The system can collect and read out data in approximately 10 s per frame to produce optimal intensity data while reducing data collection time from days to only 2 to 6 hours per crystal. Siemens Industrial Automation. Circle 141.

Supernatant Production

The Techne CIM-1 Cell Incubator can produce high titer cell culture supernatants in laboratory scale quantities. Cell biologists and immunologists can use the system to produce high yields of cell product without the need for complicated bioreactors or cell culture systems. The unique roller vessel enables monoclonal antibodies and other secreted substances to be produced with a minimum of labor and cost. The system also eliminates the need to use animals for ascites production. It is suitable for use with all current major cell lines. Techne. Circle 142.

Ultraviolet and White Transilluminators

Models of transilluminators that provide white light and ultraviolet (UV) light side by side in the same unit include White, 302nm; White, 365nm; and White, 302-365nm. The white light side is for viewing stained gels such as methylene blue or Coomassie blue and autoradiographs. The 302 nm UV provides a sensitive wavelength for nucleic acid visualization; 365 nm is excellent when photonicking and photobleaching must be kept to a minimum. Each light side measures 20 cm by 20 cm. Adjustable, transparent lids block out 100% of the UV radiation. **UVP. Circle 143.**

Rapid Quench Flow System

The RQF-63 is a new rapid quench flow system, a method of studying rapid reactions involving solutions that are not chromophores and therefore cannot be monitored by absorbance or fluorescence spectrophotometry. The technique involves initiating the reaction by combining two solutions at a mixer. The reaction is then stopped by adding a quench solution at a second mixer, separated from the first by an age loop. The progress of the reaction can be followed by stopping it at different times, or ages, and analyzing the solution by any technique appropriate to the reactants and products under study. The RQF-63 features a sample handling unit that contains a biochemical compatible thermostatted flow circuit and an electronics control unit that determines both the volume delivered into the system and its flow rate, enabling age times to be adjusted from 3 ms to 100 s. Hi-Tech Scientific. Circle 144.

Mini Pilot Plant

The Mini-Pilot Plant is designed for maximizing scale-up potential of cell cultures with a small capi-

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

SCIENCE • VOL. 264 • 1 APRIL 1994

tal expense. Cultures can be grown in vessels from 19 to 45 liters. A controller monitors pH, dissolved oxygen, and temperature, with an optional fourth channel for customization. Four sidearms on the vessel allow for installation of probes, vents, and piping systems. A heating blanket wrapped around the vessel eliminates the need for an incubator. Agitation is achieved with a top-mounted rotor. Applications of the unit include antibody or virus production, pilot plant studies, affordable scaleup, and economical mass cell production. Wheaton. Circle 145.

Probe Labeling and Detection System

The Rad-Free System for Labeling and Detection combines a novel nonenzymatic probe labeling method with uniformly dosed Lumi-Phos 530 substrate sheets for the detection of Southern (DNA) blots, Northern (RNA) blots, and colony lifts on nylon membranes. The labeling system features a photo-reactive reagent,



psoralen biotin, that intercalcates preferentially into double- or single-stranded nucleic acids and, when irradiated with long-wave (365-nm) ultraviolet light, forms a covalent bond. The variabilities and inconsistencies associated with nick-translation and random prime labeling are eliminated. All DNA exposed to psoralen biotin will be labeled within 1 hour. Schleicher & Schuell. Circle 146.

Miniature Biomaterials Tester

Solver and the second second

The Vitrodyne V-1000 miniature materials tester enhances physical testing of small medical components and materials for low force applications. Uses for the new system are wide ranging and include such tests as flexibility of catheters and small lead wires, tensile strength of films and gels, characterization of tissue mechanical properties, adhesive seal strength of medical packaging, and evaluation of implants and their constituent materials. The included software provides full machine control, real-time graphic display of test results, and flexibility in test design. Liveco. Circle 147.

Literature

Invitrogen Catalog 1994 contains up-to-date information on more than 200 products for gene expression and analysis, including a complete line of cloning and expression vectors, nucleic acid purification kits, gene transfer products, expression systems, polymerase chain reaction products, and custom services. **Invitrogen. Circle 148.**

Boehringer Mannheim Biochemicals 1994 Catalog features more than 2000 products and 150 new products. It includes technical information, such as tables for restriction endonucleases, the percentage of activity of restriction enzymes in different buffers, a complete listing of restriction enzymes and their isoschizomers, and the number of recognition sites on various DNAs. Also provided are plasmid maps that detail the location of the origin of replication, restriction sites, promoter sites, and drug-resistance genes. Boehringer Mannheim. Circle 149.

MemSep Cartridges, a guide to a new medium for bioseparations, explains how the MemSep cartridge improves separation performance compared with conventional bead-based columns. Millipore. Circle 150. BIOSTAR Inc. is a biotechnology company using advanced technologies to develop and produce high value-added biological products for animal and human health. Our continued growth and expansion require the addition of dynamic individuals experienced in corporate development, vaccine development and vaccine manufacturing.

Vice-President Corporate Development Position Code 94-A-010

Global vision and international experience equip you to champion BIOSTAR's growth from an emerging company to an integrated threshold business. Managing international commercialization of technology and products including negotiating strategic alliances, joint ventures, market agreements and technology licensing arrangements are primary accountabilities. Demonstrated ability to pick winning applications is essential. New product introduction, intellectual property management and demonstrated teamwork capabilities are also required.

Manager - Intellectual Property/Market Assessment Position Cost 94-A-011

Strategic management of intellectual property and assessment of market opportunities are the primary accountabilities of this position. Acting as the main liaison between the Company's R & D staff and external patent agents, you will coordinate filing and prosecution of patents and trademarks, plan and monitor market research and assess new opportunities. Your unique background is comprised of a PhD in a biomedical science, several years of laboratory or clinical research experience and you have, or are interested in developing working knowledge of international patenting, market research and/or market assessment.

Director, Vaccine Development Position Code 94-D-012

This strategic and senior position provides both long term and operational direction to our world class sub-unit and live vectored vaccine development program. You will provide direction to multidisciplinary teams including molecular/cell biologists, immunologists and microbiologists and advise other functional areas including production/quality control and regulatory affairs in a team matrix environment. An outstanding scientific background, and a proven track record of bringing products from R & D through to registration is essential, as are excellent people and process management skills.

Poultry Microbiologist/Veterinarian Position Code 94-D-013

Development of in vivo models for colibacillosis, other bacterial and viral diseases of poultry and testing safety/efficacy of live gene deleted and vectored vaccines are primary accountabilities of this position. You will advise multidisciplinary teams involved in vaccine production, quality control and regulatory affairs. Qualifications include a veterinary degree (DVM or equivalent), research or clinical experience in microbiology, and familiarity with modern poultry husbandry practices, vaccine development/testing, regulatory issues for genetically-engineered vaccines, pathology or biostatistics.

Manager, Bacterial Scale-Up and Production Position Code 94-P-016

Process development, scale up, validation and commercial manufacturing of genetically engineered and conventional vaccines are primary accountabilities. You will also prepare regulatory dossiers and advise multidisciplinary product development teams. A MSc or PhD in microbiology and experience in commercial vaccine production including large-scale fermentation involving microbial expression systems, and the development of protein purification systems are required.

Quality Control Supervisor Position Code 94-P-017

Development, validation and application of quality control tests for in-process, final product and stability testing of conventional and novel genetically engineered bacterial and viral vaccines under development and in production are the main accountabilities of this position. A BSc or MSc in microbiology, biochemistry or related discipline and research or quality control experience in an industrial setting are required. Analytical protein, microbiological and molecular techniques involving polyclonal/monoclonal antibodies, ELISAs, gel electrophoresis and computer fluency are also required.

Research Scientists Position Code 94-D-01

Post-doctoral and research scientist positions are available and require a PhD in molecular/cell biology, or immunology. An understanding of infectious disease, pathogenic mechanisms and vaccine development/ testing would be advantageous.

Please fax or mail your resume/curriculum vitae and identifying position code to: Maria Aitchison, Ernst & Young Management Consultants, 1400-410 22nd St E, Saskatoon, Saskatchewan, Canada S7K 5T6 Fax (306) 653-1553 and Phone (306) 652-6594



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Careers in Pharmaceuticals & Biotechnology:

East Coast

by John Timpane

Glenn Prestwich, director of the Center for Biotechnology at SUNY Stony Brook, shakes hands with Arnold Oronsky, vice president for pharmaceutical discovery, Lederle Laboratories.



The rise of the contract R&D firm The SUNY Stony Brook Center for Biotechnology Networking the east coast employment market



Genetics Institute and Collaborative Laboratories Biopharmaceutical futures at Sandoz and Glaxo Breaking boundaries is what modern science is about." So says Glenn D. Prestwich, director of the Center for Biotechnology at the State University of New York at Stony Brook. Prestwich has spent the past hour describing how the Center has broken down many boundaries once held dear by life scientists: those between industry and academia, biotechnology and traditional pharmaceuticals, molecular biology and synthetic chemistry. Networking is the key.

Nowhere is the life-science employment market more thickly networked than on the east coast. Where the West is dominated by biotechnology, the East has a much more diverse range of settings for science jobs. From Harvard to Hopkins to Duke, most of the nation's oldest research institutions are here; from Johnson & Johnson to Pfizer to SmithKline Beecham, almost all of the major so-called traditional

pharmaceutical companies are headquartered east of the Mississippi; and from Genzyme to Cytogen to Macronex, biotechnology clusters in vital hubs around the major cities from Miami to Cambridge.

New kinds of integration are springing up. University science departments are doing contract work. Big pharmaceutical firms are slimming down, merging, sharing ideas and methods with partners big and small, creating generic and biotech units, refreshing their academic contacts. The company of the future is going to be, in business parlance, "increasingly codependent" with companies of like interests. No wonder old boundaries no longer make much sense.

Networking is therefore the key to getting a job in eastern biotechnology and pharmaceuticals. Job-seekers have to know what's out there and figure out what's coming. That calls for a new kind of scientist: exceptionally versatile, as good at communication and teamwork as at science, endowed with 360degree peripheral vision. To quote James A. Hayward, president and CEO of Collaborative Laboratories in East Setauket, NY, "Future science careers will be a diverse menu of tasks, not a single course."

Our look at science careers in the East includes not only biotech—such as Genetics Institute of Andover,

Eastern Biotech Industry New England 172 Mid-Atlantic Region 114 New York 86 Northern New Jersey 49 Philadelphia/Southern NJ 48 North Carolina 47 Wisconsin 33 Illinois 27 Ohio 26 Michigan 23 Iowa 23 Florida 21

Source: Ernst & Young annual report

Mass.-but also traditional pharmaceuticals, such as Sandoz of East Hanover, N.J., or Glaxo Research Institute at Research Triangle Park in North Carolina. In between, we visit two new hybrids: New York's Center for Biotechnology, a nexus where state, business, and academic science meet to create new jobs; and Collaborative Laboratories, one of the new breed of contract R&D outfits. Their stories, and those of all their "Breaking employees, suggest how **boundaries** Private is what modern job-seekers in the East can science is about" connect and stay Glenn D. Prestwich, connected.

> SUNY Center for Biotechnology

Uareers in Pharmaceuticals & Biotechnology

East Coast

ADVERTISING SUPPLEMENT

TOP 20 PHARMACEUTICAL COMPANIES-1992 Rank - Company - Headquarters

	· · · · · · · · · · · · · · · · · · ·	Worldwide	Worldwide
1	Johnson & Johnson, New Brunswick, NJ	\$13,753.0	\$1,030.0
2	Bristol-Myers Squibb Co., New York, NY	9,937.0	1,962.0
3	SmithKline Beecham Pic., Brentford, England	9,133.0	1,274.0
4	Merck & Co. Inc., Whitehouse Station, NJ	9,067.6	2,446.6
5	Abbott Laboratories, Abbott Park, Ill.	7,851.9	1,239.1
6	Roche Group, Basel, Switzerland	7,624.1	1,358.9
7	Glaxo Holdings Pic., London	7,209.0	1,818.1
8	American Home Products Corp., New York, NY	7,007.9	1,460.8
9	Pfizer Inc., New York, NY	6,579.3	810.9
10	Ciba, Basel, Switzerland	6,187.1	1,085.7
11	Eli Lilly and Co., Indianapolis, Ind.	6,167.3	708.7
12	Sandoz Ltd., Basel, Switzerland	6,110.6	1,060.3
13	Hoechst Group, Frankfurt Germany	6,048.7	734.2
14	Bayer Group, Leverkusen, Germany	5,545.3	941.6
15	Eastman Kodak Co., Rochester, NY	5,081.0	1,146.0
16	Warner Lambert Co., Morris Plains, NJ	4,409.0	644.0
17	Rhone-Poulenc Rorer Inc., Collegeville, Pa.	4,095.9	428.2
18	Schering-Plough Corp., Madison, NJ	4,055.7	720.4
19	3M, St. Paul, Minn.	4,026.0	1,233.0
20	Marion Merrell Dow Inc., Kansas City, Mo.	3,320.0	906.5
Sou	rce: Medical Advertising News Figures in thousand	ds	

Earnings

LIFE AFTER THE THREE R'S

Rightsizing, restructuring, reorganization: three words no one likes to hear. All three rang through many major pharmaceutical companies in 1993. A slow economy contributed, as did the health care debate, some highly publicized showdowns between major companies and the FDA, and a long-overdue industry shakeout. According to Pharmaceutical Technology, total job reductions last year exceeded 30,000.

Despite all the changes, opportunities for good scientists are still numerous and far more diverse than ever before. Consider that in 1983, about 40 pharmaceutical companies did 90 percent of all hiring of pharmaceutical scientists. Since then, more than 3,400 other companies have been created: the "boutiques" specializing in a single technology or product; novel drug delivery companies; nichedriven companies; generic drug manufacturers; the contract R&D outfits, cowboy entrepreneurs who sell their ideas, talents and energies to the highest bidder; and

biotech, which may include any of the above. Instead of the giant that does it all from idea to shelf, the future biopharmaceutical company may be a central brain trust of scientists who bounce their bright ideas to the R&D contractors. The total number of jobs at these smaller companies may nearly equal the losses of 1993. For the most part, the East was the scene of this redistribution.

While many larger drug companies have cut or frozen total hiring, cuts have tended to be relatively heavier in sales forces and management than in R&D; several companies, including Schering-Plough, Roche, and Lilly, have pledged to support R&D hiring and maintain or increase their R&D budgets.

Opportunities remain, then, but the kinds of opportunity are changing. Future settings for science employment may involve smaller, leaner organizations, more teamwork, more entrepreneurship.

The employment upshot is twofold. Pharmaceutical companies will always need good synthetic organic chemists, pharmacologists, and chemical engineers. And life scientists going into niches of enduring and future need—virology, immunology, gerontological medicine, cardiology, infectious

diseases, neurological disorders, and cancer—should enjoy good careers.

Also needed are more chemical and biochemical engineers; experts in process development; scientists with legal and business backgrounds; and the truly interdisciplinary scientist not afraid of trading ideas, pounding the pavement, and creating the business. More than the sun rises in the East.



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Johnson & Johnson is the world's largest and most comprehensive health care products company serving the consumer, pharmaceutical and professional markets. To us, investment in R&D is the key to maintaining leadership throughout our entire family of companies. We believe that our worldwide

commitment of over a billion dollars in 1993 ranked us among the top American-based corporations in R&D expenditure. This fact combined with our open-end environment where contributions are fully acknowledged and advancement is based solely on ability, offers you a unique and supportive foundation on which to build your career.

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- Drug Discovery

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- Drug Safety Evaluation
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THE QUEST FOR EXCELLENCE AT **GENETICS INSTITUTE** An informal environment plus intense work equals creativity

enetics Institute of Cambridge and Andover, Mass., one of the top ten biotechnology firms in the United States, has grown by seeking ways to enhance the company and encourage the good work. In January 1992, American Home Products made an equity investment in GI

of \$670 million. GI's first approved recombinant product, Recombinate®, a factor VIII for treating

hemophilia A, was the fruit of collaboration and partnership: a 10-year, \$100-million collaboration with the Hyland Division of

Baxter Healthcare Corp. Development or licensing agreements with Wyeth-Ayerst, Boehringer Mannheim, Chugai, Sandoz Schering-Plough, and other companies are part of GI's bid to go worldwide. A constant stream of internal seminars and external collaborations connects GI with the academic community in and around Cambridge.

Internal culture is similarly dynamic. Matt Mirisola, human relations manager for

for employment employment, says, "We have an organization here that fosters a creative environment. The culture is open-minded and tolerant. Working hours are a good example. You can see people early in the morning here, late at night, on weekends, almost anytime."



Ioannis Moutsatsos,

principal scientist,

developmental biology

Ioannis Moutsatsos, principal scientist, developmental biology, is a case in point. "GI supports a nontraditional workday," he says. "I get a chance to take care of my 2-year-old son in the morning-changing a few diapers-and get to work around 11 o'clock. My associates and I have been able to organize things quite well even though we have very different work schedules.

One must be flexible about both working hours and research direction. "When I first came here," Moutsatsos says, "I was doing a lot of protein biochemistry, so I used protein purification methods based on chromatography, HPLC, that sort of thing. Then I did a lot of immunology,

raising antibodies for specific proteins, using electrophoresis and other immunochemical techniques. Now I am doing a lot of cell biology, tissue culture, microscopy, image analysis." He is now

involved with what he calls "some very risky basic research" on the controversial topic of cardiac muscle regeneration. "What's exciting is that we have to establish the basic scientific facts about cardiac muscle before we can even proceed.

"People here love to work," says Mirisola. "To support that, we've made a conscious effort to

break down barriers, even in the hierarchical power structure. We try to have people communicate in a more informal way. If you disagree with the VPs, you can tell them so-and sometimes people do. But I'd rather have that than a tight-lipped atmosphere."

principal engineer One person who definitely loves her work is and laboratory head, Catherine Briasco, principal engineer and purification process laboratory head, department of purification process development. "I chose biochemical engineering over

chemical engineering because I wanted the interaction I knew would come along with the job," she says. "Do not come into this industry unless you love working with people."

For the past year, Briasco has been helping transfer a certain manufacturing process from bench to plant scale. She is involved in nearly every phase of development, which is truly a team endeavor. "We have the fermentation scientists, chemical



Matt Mirisola, human relations manager

engineers, and biochemists who perform crude extracts of cells; the microbiologists and chemical engineers in the microbial phase; chemists and protein biochemists in purification; and the analytical protein biochemists and analytical scientists in the analysis phase. We also have day-to-day contact with project management, and routine contact with scientists in preclinical, and with the MDs and clinical research associates in clinical affairs." She laughs: "Peripheral vision is part of my job. I was always that interdisciplinary person who liked chemistry, biology, and engineering."

What does GI look for in its new hires? "Science is, of course, paramount," Mirisola says. "Beyond that, we look for a good work ethic, good communication skills, willingness to share and be a part of a team. We have a continuing need for molecular biologists and biochemists, and beyond that it's very niche-driven. Right now, I'm looking for a PhD/DVM to do animal modeling with bone and cartilage work. We just finished staffing a medicinal chemistry lab. Other needs include biostatisticians and people in clinical and regulatory affairs. We look for high-caliber talent, and that's always hard to find."

Briasco advises job-seekers to "perfect your communication skills," and Moutsatsos recommends "getting as much lab experience as you can." Both agree on the need for foresight. "You have to start thinking about your goals early in the process," Briasco says. "I saw early that I had a choice to make, and much of what I've done since reflects that choice. One I'm glad I made.'

ORCHESTRATING THE NETWORK: THE SUNY CENTER FOR BIOTECHNOLOGY Stony Brook's Glenn Prestwich conducts beautiful scientific friendships among business, academe, and the state

lenn Prestwich, director of the Center for Biotechnology

at SUNY Stony Brook, gestures to an impressive diagram of programs and says, "Basically, a lot of this is just rampant opportunism." Established in 1983 as one of 10 New York State Centers for Advanced Technology, the Center's directive is to forge lasting connections between academic science and industry.

Accordingly, Stony Brook has thrown itself open to New York businesses. Companies can avail themselves of a living skin bank, a DNA synthesis facility, a transgenic mouse facility, and centers specializing in cell culture and hybridomas, flow cytometry, mass spectroscopy, and oligonucleotide synthesis. The Center invests more than \$500,000 a year in early-stage research at various New York research institutions, assists small biotechs in the early stages of product research, and, through its Biotechnology Incubator Program, provides laboratory space, equipment, and other services to emerging firms. And a technology transfer program seeks, in Prestwich's words, "to get the good ideas out there into commercialization as fast as we can." The Center also looks to create beautiful friendships, aiding strategic alliances between businesses and research institutions. The Center's newsletter is entitled, appropriately enough, Biotechnology Network.

Among the more than 120 small science companies in New York, Prestwich sees one thing: "Growth, rapid growth. Biotech companies in the state are hiring qualified people as fast as they graduate, BS, MS, and PhD. The demand is at two levels. The first is total brain-matter science, speculative basic researchsuch as what's now going on with signal transduction-with commercial applications light-years down the road somewhere." The second level comprises applications such as diagnostics. unregulated uses, or manufacturing, for which there are fewer FDA regulations and a shorter production time. "You can't create many jobs if every single company has a 12-year timeline and \$200 million investment to product. Biomanufacturing is a chance to generate high-paying, high-quality jobs in a region where you need new industries to be environmentally friendly." The Center is



Catherine Briasco,

development

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Drug Metabolism

Riotransformation-Mass Spectrometry

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

Currently, we are seeking highly motivated PhD-level research and/or senior research scientists and BS/MS-level scientists in the Drug Metabolism Department.

The successful candidates will be involved in discovery research and development research projects, working in collaboration with other scientists on discovery and development projects within the Department, as well as project teams. Responsibilities will include designing and executing experiments involving state-of-the-art mass spectrometry, radiochemistry, HPLC and NMR where the goal is to isolate and structurally identify metabolites in biological fluids and tissues and to develop a comprehensive understanding of the pathways of biotransformation.

The PhD-level positions require a doctorate in mass spectrometry, medicinal or analytical chemistry, drug metabolism or related science. Prior postdoctoral and/or industry experience in mass spectrometry, including troubleshooting with atmospheric pressure mass spectrometers; HPLC; solid experience with computers and database management software; experience working with *in vivo* preclinical studies and biological fluids/tissues; and strong oral and written communication skills are highly desirable.

The BS/MS-level positions require a degree in analytical chemistry, chemistry, biochemistry, or related science. For these positions, previous experience in mass spectrometry; HPLC; database-management software; *in vivo* preclinical studies; and strong oral and written communication skills are preferred.



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All of the positions listed below are described at two levels. The level of responsibility to be assigned will depend on the individual applicant's educational background and experience level.

The Cancer Therapy Department has a challenging opportunity in the clinical development of novel drugs to treat human malignancies.

Assistant/Associate Director (Pos. #65446-19)

Candidates must have a M.D. with 5–8 years post-M.D. experience in clinical medicine and/or medical research. Board eligibility or certification in Oncology.

Other factors to be considered in selection include experience with clinical research methodology/activities (e.g., study design, site monitoring), experience with development of biologics, and computer experience. Ability to fulfill overnight travel responsibilities, including international travel.

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The Department of Clinical Neurosciences has two challenging opportunities in the clinical development of novel drugs for the treatment of diseases of the central nervous system.

Senior Clinical Research Scientist I/II (Pos. #65397-19, #65398-19)

Candidates must have a Ph.D. in a biological, physical, health or other related science **PLUS** 5–7 years clinical/research experience (e.g., employment in a patient care setting, such as nursing or pharmacy, clinical laboratory experience, experience as a clinical research monitor/coordinator). **OR** Master's degree in a biological, physical, health, or related experience (or Pharm.D.) **PLUS** 8–10 years clinical/research experience (as described above).

Other factors to be considered in selection include clinical neurosciences/neurology experience, pharmaceutical industry experience, experience with clinical research methodology/activities (e.g., study design, site monitoring) and computer experience. Ability to fulfill overnight travel responsibilities, including international travel.

*** * ***

The Department of Infectious Diseases & Immunology has the following challenging opportunity in the clinical development of anti-viral drugs for the treatment of serious infectious diseases.

Clinical Research Scientist I/I (Pos. #65447-19)

Candidates must have a Master's degree in a biological, physical, health, or other related science (or Pharm.D.) **PLUS** 4–6 years clinical/research experience (e.g., employment in a patient care setting, such as nursing or pharmacy, clinical laboratory experience, experience as a clinical research monitor/coordinator) **OR** Ph.D. in a biological, physical, health or other related science **PLUS** 1–3 years clinical/research experience (as described above). Scientific writing assessment.

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working closely with Collaborative Laboratories (see article, this page) to create contract biomanufacturing opportunities, with the hope of attracting R&D units from larger pharmaceutical firms.

As biotech companies move toward developing products, engineering will become vital in the next decade. "Companies, no matter their size, are going to have to scale up. They'll need people in process development, manufacturing, plant operations, and economic operations on a grand scale."

'All these new liaisons are a reminder that the definition of the word biotechnology is fuzzy in many ways," Prestwich says. "Why not define it as precisely bio-technology: technology applied to biological systems using knowledge from many different fieldschemistry, biology, physics? The more you bring other knowledge and techniques in, the more exciting. Why not, for example, include certain medical technologies, such as MRI, in the definition, since it's so central to so much research right now? We have to be willing to think broadly in this new climate.

FIGHTING THE FIRE DU JOUR AT **COLLABORATIVE LABORATORIES** James Hayward and company look for hot needs and then design creative ways to meet them



ollaborative Laboratories in East Setauket, NY, was formed out of several companies with diverse but connectible interests. Its name reflects

an origin based on teamwork and a brainstorming style of business and science. Whereas most small science companies are unifocal cottage industries, Collaborative

paints from a broader palette. "We're not really interested in the traditional line of commercialization, says James A. Hayward, president and CEO. "Instead, we loo to fast-track, nonregulated applications-for example, taking a drug delivery system and making an aquacultural diet out of it. That means we work with a diverse range of industries-the pharmaceutical, the cosmetic, the chemical, the agricultural." Employing liposome technology, Collaborative explores everything from ink formulations to cosmetic and food applications such as flavor and fragrance stabilization, and emulsions for ketchup and mayonnaise.

Collaborative, as one of a new species of contract R&D firms, is looking for a novel kind of scientist, quick to the marketplace, with the knack for speaking across disciplinary lines. Biophysicists and biochemists work alongside molecular biologists—everyone helps make decisions and create opportunities together. "We have to be able to fight the fire du jour around here," Hayward says. "For us, it's an awful lot of fun."

The first employee at Collaborative was Mindy Goldstein, director of development services. After a doctoral thesis on repair of genetic damage induced by ultraviolet irradiation, she did a postdoc at Stony Brook, switching to a study of modulation of sterols in fungal membranes in response to sublethal doses of nystatin. At the same time, she literally taught herself molecular biology. She has picked up many useful skills: SDS-PAGE gels, work with nucleases and restriction enzymes, GC and HPLC, enzyme assays, and experience in mutagenesis and cytogenetics. "There's no

'At Collaborative, I do a lot of things," Goldstein says. "I've taken part in almost every aspect, from production to raw materials development to formulation. I liaise with clients one-on-one. I also do some sales: I'm out at the booth at trade shows. In a small company like this, you need people who can wear many different hats, able to turn on a dime from one project to another. I love the



constant shuffle. You never get bored, that's for sure. My days are pretty long-but then, there is no nine-to-five job in the sciences.

Goldstein's longtime associate Joe Ceccoli, director of technical services, received his BS in biotechnology at the Rochester University Institute of Technology. He describes hanging around the labs at Rochester: "I was in the labs 20 hours a day; they had to chase me out. Thanks to the good program I was in, I'd made my own plasmids and hybridomas even before I went looking for a job.

'There's no expert of everything," he says. "You have to be willing and able to adapt to the next challenge. I help in lab development, scale-up, piloting, day-to-day plant operations. You can be running a power line across the ceiling one moment and be calculating the release profile kinetics of a liposome the next."

Patricia M. Halloran, coordinator of biotech resources, says, l've taken a somewhat forked educational path." She earned a BS in general science (emphasis in chemistry) with a minor in business administration at Villanova, an MS in pharmacology at Mt.Sinai School of Medicine, and an MBA in health care management from Boston University (while working in industry).

Halloran gets to do "both the lab work and the business end of things." Her group applies cell biology in personal care products, requiring her to work closely with several different kinds of scientists: "I'll do some cell work, our

biochemists will do the characterization, and our chemists will do the analysis." She is constantly involved in tissue culture, cell maintenance, ELISA. radioassays, and the use of human inflammatory cells as mediators of in vitro irritancy. Her group also works closely with the department of pathology at SUNY Stony Brook, who furnish skin models for her group's tests.

"It's all very diverse, and very entrepreneurial," she says. "That's life at a small company."

Collaborating at

Collaborative: (I to

r) David Watkins, James Hayward, Mindy Goldstein,

contract R&D using liposomes to

encapsulate

products for oral or

inhalational delivery. "All of the time we're doing

this real science,

we constantly have

to keep an idea's

loe Ceccoli. Patricia Halloran

David Watkins, group leader, biochemistry, decided to leave academia when "grant writing, a long, hard slog for relatively little, began to get pretty old." His group undertakes



expert of

everything"

loe Ceccoli,

director of

Collaborative Laboratories

commercial potential in mind. All of us are entrusted with thinking up ways to turn what we're doing into profitable ventures."

Watkins maintains his academic ties as adjunct assistant professor of pharmacology at Stony Brook. As for the other sciences, "Now I talk to chemists and formulators and pharmacists about a huge number of things. It never would have occurred to me a year ago that you could enclose a drug

in some sugars, still less that I might have been interested in that. I can now read papers and understand a little bit of chemistry. I knew nothing about business before I came here. Now I'm writing a mass-mailing brochure, which I never would have dreamed of doing. Everybody does everything here. Sometimes it gets a bit chaotic, but I like it that way.





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OUTREACH AND INSIGHT AT GLAXO One of the world's biggest pharmaceutical firms incorporates both biotech and traditional chemistry and biology

t the Glaxo Research Institute, "matrix management" is not so much the nickname for a new administrative fad as a way of life necessitated by the new science network. At Glaxo, academia meets industry, biotech meets pharmaceuticals, and the sciences meet one another—daily.

Glaxo is one of the largest and healthiest drug companies in the world, with a diversified line of dermatologic, cardiovascular, gastrointestinal, respiratory, and central nervous system products. Imitrex® is an agent for the treatment of migraine. Zantac®, an antiulcer agent, is the world's best-selling drug, and the bronchodilator Ventolin® is the world's best-selling asthma therapy.

Located in North Carolina's Research Triangle, Glaxo is about equidistant from Duke University, the University of North Carolina, and North Carolina State University, sources of both continuing collaboration and future employees. Sandra Michaux, manager of human resources, says, "That connection is well established and benefits both the company and the institutions." Other universities, such as University of Tennessee at Oak Ridge, University of Indiana, Rockefeller University, and Cal Tech, add to the network.

Glaxo is one of several pharmaceutical giants that have begun to bring biotechnology into their research efforts. Wen-ji Chen, a research investigator in the division of molecular sciences whose work would fit in well at hundreds of biotech labs, says, "We can join the disciplines of biotechnology and classical pharmacology in a way that a smaller biotech firm really can't." Michaux adds, "We have the tradition of pharmacology here—and we can combine that with all the fresh ideas and new techniques brought in by our new recruits."

For the job-seeker, this means that crossover skills are in demand. Michaux says that Glaxo values "specifics balanced with diversity—the more enhanced a candidate's experience has been, the more helpful." Paul Feldman, senior research investigator, medicinal chemistry, puts it another way: "Be focused, but not narrow. It's not quite the way it is at small biotech firms, where crossover is everything. We hire people with a pronounced, focused expertise on one area—but we also look for that open mind, that willingness to collaborate and learn other sciences."

Matrix management means that collaborative teams of scientists are set up across disciplinary boundaries to help develop new therapeutic agents. Feldman's work in organic synthesis was involved, for example, in the effort that led to the discovery of remifentinal, an ultra-short-acting opioid analgesic. "It's true team science," he says. "In medicinal chemistry, we work with cell biologists, protein chemists, enzymologists, molecular biologists, and pharmacologists-and that's not everybody." This philosophy calls for a scientist who can work as part of team, write and speak effectively, collaborate across disciplines, and stay flexible about career and research directions.

From the hiring perspective, that means looking for evidence that a given candidate has a record of successful team participation. "We look for team-based experience in the past," Michaux says. "That means concrete examples of what the candidate has done either as a leader or as a member of a team. We look at what worked well for them in the past and what didn't."

Chen has sculpted her career in light of the market realities in her field, changing along with her tightly interconnected community. She came to the United States after receiving her bachelor's degree in Taiwan. "My BS was in medical technology, as part of which I took a course in biochemistry. I liked it a lot,

"Both undergraduate and graduate scientists are more aware of the employment opportunities than I was in grad school...As the industry becomes more complex, that's a trend that can only continue" Paul Feldman. senior research investigator, Glaxo **Research Institute**

which made me think about my future direction." She attended Purdue University, where she received her MS in biochemistry. "I was working primarily with yeast, which at the time was a very hot field, but I could see that the field was changing and that my future interest would focus elsewhere." Even during her PhD work in biochemistry at the University of Texas Southwestern Medical School, she was looking for a new direction. "I knew that yeast wasn't going to be the field of my future," Chen says. "Even before I started writing my dissertation, I was looking around for a postdoc position in a field that would be hot down the line."

That very opportunity came when she landed a postdoc, again at the University of Texas Southwestern Medical School—but this represented a complete change of field, for now she would be working in mammalian cell systems, a field that is extremely au courant. She studied low-density lipoprotein receptor systems, with applications in cardiovascular medicine. Her mentors in that endeavor were Joseph L. Goldstein and Michael S. Brown, whose work with LDL receptors had earned them the 1985 Nobel Prize. A good interview with Glaxo and a recommendation from Goldstein and Brown led to the job.

Now she works in molecular genetics, "a primary area of recruitment for Glaxo right now," according to Michaux. Chen uses DNA technology in genetic engineering techniques; her expertise in mammalian cell tissue work now stands her in good stead. But it's not all research. "I spend about 10 to 20 percent of my work time writing," she says. "Just keeping careful lab records is a substantial writing task. And you have to be able to communicate verbally, since so much of your job is at team meetings, presentations, and outside communications such as at professional meetings."

Feldman is impressed by the growing industry savvy of science job-seekers. "Both undergraduate and graduate scientists are more aware of the employment opportunities than I was in grad school. Graduate students especially are quite knowledgeable about the pharmaceutical industry. As the industry becomes more complex, that's a trend that can only continue."

Michaux, Feldman, and Chen recommend that job-seekers in pharmaceuticals choose a prominent program at a school respected in their chosen field; get lots of laboratory experience; get a mentor who can direct their study and career goals; get the advanced degree; do postdoctoral research in a field that will either stay hot or will heat up in the next 10 years; acquire skills and expertise that cross disciplinary lines; learn to communicate well; and stay flexible as fields and industries change.

FATEFUL DECISIONS AT SANDOZ Anticipating the future now has helped Sandoz stay with the big changes in biopharmaceuticals

wo fateful decisions at Sandoz in the mid-1980s have shaped job opportunities for the better. "Back then many of the big pharmaceutical companies were increasing the size of the sales forces," says Larry Bauer, executive director of public affairs for Sandoz.

"We didn't. Instead, we felt the company's future depended on continued research and development. That's meant we haven't needed to do the retrenching that's now so common." It has also meant a strong run of prominent discoveries in the last 20 years. Sandimmune® (cyclosporine), prescribed for organ transplant prophylaxis, is the best-selling Sandoz product worldwide. Parlodel® (bromocryptine) is widely used to treat symptoms of Parkinson's disease, as is Clozaril® (clozapine) in the treatment of schizophrenia, and Sandostatin® (octreotide acetate) in the treatment of metastatic tumors.

The second decision was to embrace the then-new field of biotechnology. Michael Swerdloff, assistant director of human resources for the Sandoz Research Institute, calls this move "a big change in emphasis both in the industry at large and in



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Responsible for laboratory scale development of enzymes, antibiotics, and other fermentation compounds for scale-up to pilot plant and production environment. Qualifications include a Ph.D. in Biochemistry, Enzymology or closely related science along with academic training and research experience in microbiology as related to bacterial and fungal fermentations, and in enzyme technology as related to recovery, purification, immobilization and use application. **Please reply to: Position # IW-058**.

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Supervise an Analytical Group providing assay service for GMP/GLP biologics, antibiotic and enzyme development programs. Primary responsibilities include developing new assays, and improving and increasing throughput of existing assays while assuring GMP assay status. Candidates must have an M.S. or Ph.D. in Analytical Chemistry and related industrial experience which includes familiarity with GMP Analyses, Validation protocols, HPLC and robotic automation systems. The ability to motivate a team under deadline situations, as well as establish validation/calibration procedures and methods development, is essential. Please reply to: Position # DL-058.

ASSISTANT/ ASSOCIATE SCIENTIST Molecular Biologist, M.S./B.S.

Responsible for supporting the development of improved cell lines by genetic engineering. Primary focus on gene expression in mammalian hosts. We seek an M.S. or B.S. in molecular biology with experience in gene expression. Industrial experience is desirable. Please reply to: Position # BCO-6193.

GMP SCIENTIST/ENGINEER, B.S.

Assist in the preparation of all qualification and validation protocols, monitor validation study programs and collate data into final validation documents. A thorough understanding of GMP compliance issues is a prerequisite. **Please reply to: Position # SC-001.**

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This position is responsible for preparing operating instructions and monitoring pilot plant operations to develop/produce penicillin and other antibiotics. You will also evaluate new techniques in pilot plant operations and oversee large scale fermentation processes. Requires a B.S. in Engineering with 6 - 8 years experience or an M.S. degree with 4 - 6 years experience. **Please reply to: Position # SC-005**.

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ANIMAL STUDIES: Scientist with experience in conducting preclinical studies of vaccines/therapeutics to manage a multidisciplinary program of small animal and primate studies for the development of human vaccines and therapies. The successful candidate will coordinate activities of multiple scientists and contractors, and manage a staff of research associates conducting preclinical immunization studies. Applicants should possess a PhD or DVM; 2-4 years Virology experience and experience with primate models of human disease would be desirable.

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Applicants should possess PhD or equivalent in Biomedical Science, and minimum 3 years experience in patent affairs in the pharmaceutical or biotechnology industry. Responsibilities include patent searches, patent applications, and interacting with internal/offsite patent attorneys in patent prosecution. **TUMOR BIOLOGY:** Scientists with experience in tumor biology and a strong background in tumor immunology to participate in the development of therapies for prostate cancer and other malignancies. Additional experience in the identification of tumor specific antigens is desirable.

MUCOSAL DELIVERY: Scientists with expertise in mucosal immunization for induction of systemic and local immune responses. Individuals with experience in promotion of mucosal uptake of antigens by means of novel delivery systems/enhances/adjuvants is desirable. Previous experience in preparation of pharmaceutical formulations for human use is also desirable. Successful candidates will participate in the formulation, evaluation and development of mucosally administered vaccines or therapies.

MUCOSAL IMMUNOLOGY: Scientists with experience in mucosal immunology for development of synthetic vaccines and therapeutics. Experience with IgA assays; mucosal cellular immunity assays, and other measurements of local secretory immunity is desirable.

VACCINE FORMULATION: Scientists with expertise in the formulation of antigen delivery systems to stimulate cellular, humoral, and mucosal immune responses. Priority will be given to individuals with experience in the preparation and characterization of stable, sterile emulsions for administration to humans. In addition, special consideration will be given to candidates with extensive experience of vaccine adjuvant formulations.

MANAGER, BUSINESS

DEVELOPMENT: Applicants should possess PhD or equivalent in Biomedical Science, and minimum 3 years experience in business development in the pharmaceutical or biotechnology industry. MBA would be desirable. Successful candidate will focus on licensing and acquisitions, and company-investor relations, and will interface with senior management in the area of strategic planning.

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Sandoz in particular." Daniel Levitt, executive director of the cytokine development unit at Sandoz, says, "The industry in the late '80s looked at itself and asked, "Where do we need to be in 10 to 15 years to maintain a competitive position? Answer: stay or get on the cutting edge in these new key areas. Sandoz made that commitment in the mid-1980s. We were an early aggressive mover in this direction and have stayed with it." Levitt's research is an excellent case in point. "Clinical research is part of a matrix—it's not just trials, but also development, licensing, regulatory affairs, and testing novel technologies. We're working with groups growing bone marrow cells in culture for reinfusion. That requires interaction with gene therapy companies. Use of bone marrow as a vehicle for engineered genes or as reinfusion for cancer therapy—that's vanguard science."

Swerdloff affirms that there will always be a baseline need for organic medicinal chemists in the pharmaceuticals industry-but

"The introduction of genes into organs and cells by viral and liposomal mechanisms, and being able to target them to specific organs and get them to function in an organ-specific manner that's a very hot field. And signal transduction—dealing with various signaling enzymes, transcription regulatory factors, and cell cycle control proteins—that's a very hot area in a number of different therapeutic applications."

"Companies understand now that they can't develop everything by themselves," says Swerdloff. "That's why we have so many research projects with other companies, biotech firms, and universities." Sandoz has a continuing collaboration with Johns Hopkins University, and a 10-year, \$100-million joint research project in oncology with Dana-Farber. "Changes are happening so fast that companies are supporting research at universities and biotechs just to stay involved and at the forefront. Many of the biologists we're hiring-molecular biologists, molecular



even organic chemistry is changing as science and industry change. "The leads for new organic structures are coming more out of receptor structure and computer modeling studies, so the average organic chemist has a good background in molecular modeling today. The strong recent emphasis on chiral synthesis means that in the analytical field you see an active niche for specialists in separating chiral molecules via HPLC. Even in the traditional spectroscopies, we're looking more for people with biological backgrounds to do bio NMR. We actually formed a new structural biology department a

year and a half ago." When he switched from academe to industry, Levitt was immediately struck by two things: the excellence of industrial science and the interdependence of his old and new realms. "The science was really first-rate, and I found I had direct access to the people performing the trials. I could learn about new things long before they ever made it into journals. That would give us new ideas, new bases for collaboration." As an example, Levitt names Steven Rosenberg of the National Cancer Institute, an early champion of the cell therapy approach to cancer treatment. "Now that's someone who I'd never have had contact with before. If you're involved in a high-profile project in industry, you also become a very important person in academia-your contacts grow immensely. Within my first year, I was known to people in the field who would never have heard of me before. I was invited to speak at international meetings, go on grand rounds at too many hospitals to count. The networking was unlike anything I had ever seen."

Asked to identify the hot fields right now, Levitt says,



"When the new health care discussion first started. everybody froze-but now people are relaxing, hiring is starting to loosen up, everyone is looking forward again"

Cary Garner, Consultant, CG Enterprises

geneticists, oncologists, cell biologists—really are the same people who are working in biotech. More is happening on the cellular and molecular level. That tends to require very multidisciplinary research. It's not really new—but it's the strongest trend out there."

At Sandoz, then, the corps of pharmacologists and organic chemists now work closely with a growing corps of molecular and cell biologists and immunologists. New work on drug delivery requires pharmaceutical science degrees as well as analytical and physical chemists. "Bioanalytical people are in demand," Swerdloff says, "for work with HPLC and other chromatography. And biostatisticians are in great demand." In clinical research, the needs are especially diverse. "We're looking for PhDs in preclinical pharmacology, toxicology, pharmacokinetic evaluations; people from BS to PhD to work as CRA's at all levels," Levitt says. "We're looking for MDs with backgrounds in oncology, immunology, and infectious diseases. RNs are also important: they are the ones who have the most patient contact; they help administer the trials and handle the data."

With all the activity and all the crossing and merging of boundaries, it is difficult for Larry Bauer not to be optimistic. "In the next 25 years, given the freedom to explore and the resources to invest, this industry is going to find the cure for many kinds of cancer, significant treatments for AIDS, and cures or near-cures for multiple sclerosis and myasthenia gravis. Tomorrow's cures are going to come from here."

John Timpane, PhD, writes frequently on pharmaceuticals and biotechnology.



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■ We are looking for an individual with experience in modern methods of genetic epidemiology. The ideal candidate will have post-doctoral experience and research interest in analysis of complex traits in human populations. Knowledge of non-parametric methods, linkage analysis and related analytic methods is essential. The candidate is expected to assume a prominent position in the human genetics program as well as in the development of a world class bioinformatics group. SM-03.

RESEARCH ASSOCIATES

Expertise in expression cloning, mammalian cell culture, gene expression and functional assays, Northern, Western Blot, IP and RIA techniques. A working knowledge of protein purification is desirable. The position requires a BS/MS, along with 4 plus years' experience in cell and molecular biology. SM-04.

 BS/MS level scientist with 5 years' experience in Molecular Biology, Biochemistry or Biology. Must be flexible, and excel in some of the following areas: molecular cloning, PCR, YACs,

LLENN

PHARMACEUTICALS

Pathways To Discovery

protein chemistry, prokaryotic/eukaryotic expression systems, PFGE, constructing and screening cDNA and genomic libraries, and in situ hybridization. SM-05.

In the cDNA core group, you will use your extensive knowledge of both construction and screening of cDNA libraries for the purpose of new gene discovery. You will also work to further develop and automate these technologies. BS/MS with 5+ years' relevant experience. SM-06.

Working in the genomic technology group, you'll apply your skills in PCR, southern hybridization and library screening for the purpose of gene discovery. You'll also work to develop and automate these technologies. BS/MS with 2+ years' relevant experience. SM-07.

BIOINFORMATICS

SYBASE-DATABASE MANAGER

Responsibilities will include the design of multiple databases, interaction with our researchers to specify application needs, maintenance of database integrity and database backups. BS/MS in computer science or equivalent as well as 3-5 years' relevant experience. SM-08.

PROGRAMMER/ANALYST-(SYBASE)

■ Expertise in building and maintaining database applications and developing user interfaces in a client/server environment. Must have proven experience in C, C++ programming, SQL interfaces. A working knowledge of Object Oriented design/ programming highly desirable. BS/MS in computer science or equivalent as well as 3+ years' relevant experience. SM-09.

LAB AUTOMATION

You will design, implement, and maintain a series of integrated robotic workstations to be utilized by our genomic and molecular biology research groups. As an integral member of our research team, you will maximize the latest automation technology, and take a lead role in the development of novel approaches in laboratory automation.

Your credentials should include 3+ years of experience in lab automation and robotic programming, including demonstrated accomplishments in answering diverse robotic challenges. An educational background in the biological sciences and/or Mechanical or Electrical Engineering, and excellent interpersonal and communication skills are necessary. **SM-10.**

ADVANCED TECHNOLOGIES IN GENETICS

SmithKline Beecham, a worldwide leader in the pharmaceuticals industry, has established within its Research and Development group a new unit, Advanced Technologies in Genetics (ATG), whose charter is to establish SmithKline Beecham at the forefront of genetic medicine. We currently have available opportunities for a Director and other scientific experts in the field of Bioinformatics and opportunities for scientists in Molecular Diagnostics R&D and an opportunity for a Clinical Geneticist.

Director, Bioinformatics Research

Bioinformatics Research will support the ATG effort as well as collaborate in the analysis of a unique source of scientific data. The group will be responsible for developing broad core competencies in bioinformatics, and focus on the exploration and development of advanced computational tools and their application in internal and external collaborative research.

The successful candidate for the Director position will have extensive knowledge in some of the following: bioinformatics, sequence analysis and algorithms, computational molecular biology and genomic data management. Educational achievements include a Ph.D. in a biological, chemical or computational science with at least ten years postdoctoral experience. Good interpersonal, communication and leadership skills are essential, together with the capacity to work well under pressure. Strong planning, organization and problem solving skills are also required. Demonstrated record of publication is a MUST. Refer to Job Code #M108.

Scientists, Molecular Diagnostics

There are also exceptional opportunities available for scientists at all levels with diagnostic industry experience interested in joining one of the world's leading pharmaceutical organizations.

Working in our Molecular Diagnostic Department, the selected individuals will identify new clinical markets as well as develop diagnostic assays. These individuals will perform SDS-PAGE, IEF, Western blotting, ELISA and PCR. The selected candidates will have a B.S., M.S. or Ph.D. in Biochemistry, Molecular Biology, Medical Technology or related fields. Additional experience in diagnostic product manufacturing is highly desirable. Refer to Job Code HATG.

Clinical Geneticist

Working as an integral part of the ATG Management Team, composed of scientists, project managers and legal support, the Clinical Geneticist will have worldwide responsibilities for providing a center of expertise in clinical genetic medicine to support the activities of Research and Development as both groups incorporate the rapidly emerging clinical aspects of genomic technologies into their core competencies.

The successful candidate will have an M.D. with postgraduate training in human genetics. Clinical research experience in human genetics including pedigree analysis and positional cloning is essential. Experience as part of a multidisciplinary team seeking novel human genes as contributors to disease strongly preferred. Refer to Job Code #M109.

Located in our state-of-the-art research facility in suburban Philadelphia, SmithKline Beecham offers a competitive compensation/benefits/relocation package. Qualified candidates should send CV/resume, indicating desired position job code, in confidence to: SmithKline Beecham Pharmaceuticals, Job Code____, PO Box 679, Conshohocken, PA 19428. We are an Equal Opportunity Employer, M/F/D/V.



SCIENCE

PERSONNEL PLACEMENT

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POSITIONS OPEN



The electors intend to proceed to an election to the Professorship of Genetics with effect from 1 October 1995 or such later date as may be arranged.

Possibilities exist for collaboration with the new MRC Genetics Unit to be created at Har-well from the existing MRC Radiobiology Unit.

The stipend of the professorship is at present £34,984 per annum.

A non-stipendiary professorial fellowship at Keble College is attached to the professorship.

Applications (ten copies, or one only from overseas candidates), naming three referees, should be received not later than 9 May 1994 by the Registrar, University Offices, Welling-ton Square, Oxford 0X1 2JD, from whom further particulars may be obtained.

The University is an Equal Opportunity Employer.

ASSISTANT PROFESSOR OF PHYSIOLOGY, tenure-track position in the Department of Physiology and Pharmacology. The candidate will be expected to develop a research program in CARDIOVASCULAR PHYSIOLOGY and participate in teaching both med-ical and graduate students. Please send curriculum vitae, names and addresses of four references, recent reprints and a brief statement of research interests to: Dr. Fredand a brief statement of research interests to: Dr. Fred-erick J. Goldstein, Chair, Search Committee, Depart-ment of Physiology and Pharmacology, Philadelphia College of Osteopathic Medicine, 4170 City Avenue, Philadelphia, PA 19131–1694. All applications must be received by April 29, 1994. Equal Opportunity/Affir-mative Action Employer.

NEUROBIOLOGIST. The Department of Cell Biology, Neurobiology and Anatomy, University of Cin-cinnati, invites applications for a tenure-track faculty position at the ASSISTANT or ASSOCIATE PRO-FESSOR level. We seek an outstanding scientist with expertise in developmental neurobiology or neuroendo-crinology, using cellular or molecular approaches. Appli-cants must have a Ph.D., postdoctoral experience and a strong publication record. The successful candidate will be expected to establish a vigorous, independent research program with extramural funding and participate in the teaching of graduate and medical students. The position offers a competitive salary and laboratory start-up package. Applicants should send curriculum vitae, a concise age. Applicants should send curriculum vitae, a concise statement of future research plans and names of three references to: Dr. Nira Ben-Jonathan, Chair, Search Committee, Department of Cell Biology, Neurobiol-ogy and Anatomy, University of Cincinnati College of Medicine, P.O. Box 670521, Cincinnati, OH 45267–0521. University of Cincinnati is an Affirmative Action/Equal Opportunity Employer.

ASSISTANT PROFESSOR IMMUNOLOGY

Applications are being accepted for a tenure-track position available September 1994 or January 1995. The successful applicant will be expected to establish an independent research program. Specific research area is open. Responsibilities of the position include teaching immunology to undergraduate and graduate students. A Ph.D. and postdoctoral experience are required. Our department has 50 faculty members, over 75 graduate Salary: students and state-of-the-art research facilities competitive, negotiable upward from \$33,000. Please send curriculum vitae, statement of research plans and teaching interests, and three letters of recommendation by May 6, 1994, to: Ms. Jean Witkowski, Department of Biological Sciences, Ohio University, Athens, OH 45701-2979.

Ohio University is an Equal Opportunity/ Affirmative Action Employer.

POSITIONS OPEN

DEVELOPMENTAL NEUROBIOLOGIST

The Neurobiology Research Center at the University of Alabama at Birmingham (UAB) School of Medicine invites applications for a tenure-track faculty position at the ASSISTANT PROFESSOR level. Applicants the ASSISTANT PROPESSOR level. Applicants should have at least two years of postdoctoral experience. The Center is seeking an outstanding individual with a strong record of achievement using modern approaches to developmental neurobiology whose interests comple-ment those of current members. Interests of the faculty include neuropal gild ion, channel function, empartic include neuronal-glial ion channel function, synaptic plasticity and modulation, growth cone navigation in the embryo, postnatal development of sensory systems, sig-nal transduction and intracellular signalling. The Center has excellent research facilities and has recently been has excellent research facilities and has recently been provided with new space in the Civitan International Research Complex on the UAB campus. The develop-ment of the Center is supported by funds from the UAB School of Medicine, the Lucille P. Markey Charitable Trust and the W. M. Keck Foundation. Send curriculum vitae and statement of research plans and have three latters of research discussion core to:

Send curriculum vitae and statement of research plans and have three letters of recommendation sent to: Michael J. Friedlander, Ph.D., Faculty Search Com-mittee, Neurobiology Research Center, 1719 6th Avenue South, CIRC 516, University of Alabama at Birmingham, Birmingham, AL 35294-0021 by May 15, 1994. UAB is an Affirmative Action/Equal Opportu-vity Emplayer nity Employer.

ASSISTANT PROFESSOR OF PHYSIOLOGY. ASSISTANT PROFESSOR OF PHYSIOLOGY. The Department of Physiological Sciences, College of Vet-erinary Medicine, University of Florida is seeking applica-tions for a tenure-track, assistant professor-level position in physiology. The primary teaching responsibility in the pro-fessional degree (DVM) curriculum will include a course in renal physiology. The successful candidate will also partici-pate in other courses, depending on background and specific interests. The successful candidate will be expected to devel-op a productive program of research in an area of interest. Qualifications include the Ph.D. degree and significant post-doctoral evocrience and training. Preference will be given to doctoral experience and training. Preference will be given to those individuals demonstrating success in the acquisition of extramural research support. Applicants should send their letter of application, curriculum vitae, and names and ad-dresses of three references to: Dr. Paul W. Davenport, Search Committee Chairman, Department of Physiological Sciences, College of Veterinary Medicine, P.O. Box 100144, University of Florida, Gainesville, FL 32610– 0144. The deadline for applications is June 15, 1994. The University of Florida is an Affirmative Action/Equal

Opportunity Employer/Educator.

CELLULAR AND MOLECULAR PHYSIOLOGY THE UNIVERSITY OF IOWA

Applications are invited for faculty positions at the ASSISTANT, ASSOCIATE or FULL at the ASSISTANT, ASSOCIATE OF FOLL PROFESSOR level in an expanding research-based department. Candidates should be pre-pared to establish an independent program of excellence in cellular and/or molecular physiology research complementing areas of depart-mental strength. These include developmental mental strength. I nese include developmental biology, eukaryotic gene expression, molecular endocrinology, neurobiology, signal transduc-tion, imaging of physiological processes, and function of ion channels and membrane protion in established interdepartmental programs in Molecular Biology, Neuroscience, Immunol-ogy and Genetics and in Cardiovascular, Diabetes/Endocrinology and Cancer Centers. Start-up funds and salary are competitive. Minimum re-quirements are a Ph.D. or M.D. degree and two years of relevant postdoctoral training. Screening begins April 1, 1994. Send curriculum vitae, description of research, reprints of recent publications and three letters of recommendation to: Dr. Deband three letters of recommendation to: Dr. Deb-orah L. Segaloff, Chair, Cellular and Molecular Physiology Search Committee, Department of Physiology and Biophysics, The University of Iowa College of Medicine, Iowa City, IA 52242-1109, The University of Iowa is an Equal Opportunity/Affirmative Action Employer. Women and minorifies are encouraged to apply.

ASSOCIATE DIRECTOR IMMUNOLOGY

t BioTransplant, we're solving the challenges of organ transplantation ection and limited supply with innovative research. genetic engineering and a focused strategy for commercialization. Led by world class scientists and backed by substantial financing, we're developing complete a plus oruan transplant systems, including is. biologicals and nedical devices n an established

scientific leader.

You'll play a lead role in the development of clinically appropriate methods to induce specific immune tolerance to organgrafts, in order to enhance the success of organ transplantation. Requires a Ph.D. in Immunology or a related field, with 5-10 years' experience in at least one of the following areas: mechanisms of T cell activation and/or tolerance induction; signal transduction; antigen processing; and regulation of cytokine production. Demonstrated scientific leadership, along with strong management and communication skills are essential. Experience with the manipulation of human lymphocyte subpopulations is preferred; and industrial experience is

With the goal of making life saving organ transplantation highly available, we're moving toward the clinical trial phase.
You'll enjoy a professionally stimulating environment and a competitive compensation package. Send your resume to: Human Resources, BioTransplant, Inc., Bldg. 96, 13th Street, Charlestown Navy Yard, Charlestown, MA 02129. We are an equal opportunity employer.



BIOREACTOR SPECIALIST

Wyeth-Ayerst Research, a division of American Home Products Corporation, has opportunities in the Structural Biology Department at our research facility located in Radnor, Pennsylvania.

This position is responsible for bioreactor/fermentation apparatus set-up, operation and maintenance, as well as for optimization of cell culture conditions for production of recombinant proteins and hybridomas. Requirements include a BS/BA with an advanced degree (MS, PhD, Pharm.D.) preferred in a scientific discipline as well as 6-10 years relevant experience. The qualified candidate should possess specific expertise in all aspects of high-level production of heterologous proteins in various eukaryotic cells/cell lines utilizing bioreactor technology. Experience in the generation of recombinant proteins by microbial fermentation as well as knowledge of cell biology and cellular physiology desired.

Wyeth-Ayerst offers an excellent compensation and benefits package in a highly professional environment. Please respond by sending your resume with salary requirements to: Wyeth-Ayerst Research, Human Resources, Position #I-127, P.O. Box 8299, Philadelphia, PA 19101-0082. An equal opportunity employer, M/F/H/V



Biotechnology Opportunities

Baxter Biotech, Hyland Division, is a leader in the production of plasma derivatives and biotechnologically-derived pharmaceuticals. We seek the following professionals to join our team.

PROJECT MANAGER (Code: MGR/PM)

We seek an individual to manage, coordinate, plan, communicate and directly participate in special projects in our pilot plant and manufacturing departments. Activities will include performing feasibility experiments, producing clinical and stability materials for licensing, investigating solutions to manufacturing problems, and developing new technology for implementation into manufacturing. We require 3+ years experience in biological manufacturing or knowledge of pilot plant protein purification and CGMP. PhD in biochemistry or related field preferred.

PACKAGING SUPERVISOR (Code: JPB/PS)

This individual will supervise the packaging of therapeutic protein products, including employee supervision; FDA/GMP compliance; safety training; and adherence to department budget. Applicants must possess 2-3 years supervisory experience in the medical or food industry, and an extensive background with automated packaging equipment. Knowledge of GMP regulations essential. College degree in Engineering, Science, or Business preferred.

Employment is contingent upon the result of a drug screening test.

Visit us at the Career Connection Biotechnical/Pharmaceutical Job Fair April 22 and 23 at the Guest Quarter Suites in Cambridge, MA.

Or, for immediate consideration, please send resume with salary history to: **Baxter Healthcare Corporation, Hyland Division, Attn: Human Resources Dept., Code:** _____, 4501 Colorado Blvd., Los Angeles, CA 90039. Only resumes with salary history will be considered. An Affirmative Action/Equal Opportunity Employer

Hyland Division



POSITIONS OPEN

ASSISTANT PROFESSOR TOXICOLOGY-Immediate Opening: Northeast Louisiana University School of Pharmacy invites applications for the posi-tion of Assistant Professor of Toxicology. Candidates for this 12-month tenure-track position should possess a Ph.D. degree and 1 to 3 years of postdoctoral experience in toxicology. Although individuals experi-enced in aquatic toxicology are preferred, qualified scientists in any area of toxicology will be considered scientists in any area of toxicology will be considered. Scientists in any area of toxicology will be considered. The successful candidate will participate in undergrad-uate (B.S. Toxicology) and graduate (M.S. and Ph.D. programs) teaching and will be expected to develop an extramurally funded research program. Interested indi-viduals should submit a letter of application including a statement of research interests complete curriculum statement of research interests, complete curriculum vitae, and the names of three references to: Dr. Carey Pope, School of Pharmacy, Northeast Louisiana University, Monroe, LA 71209–0470. Northeast Louisiana University is an Equal Opportunity Employer. Applications are encouraged from women and members of minority groups.

COGNITIVE PSYCHOLOGIST

The psychology department at the University of Cali-fornia, Davis, invites applications for a tenure-track appointment at the **ASSISTANT PROFESSOR** level, to begin in July 1994 or during the 1994–95 academic year. Requirements for the position include: a Ph.D., a strong commitment to quality teaching at the graduate and undertraduate levels and potential for developing and undergraduate levels, and potential for developing an active research program within some area of cognitive psychology; e.g., memory, problem-solving, language, perception, or cognitive neuroscience. Interested appli-cants should submit curriculum vitae, a statement of research and teaching interests, representative reprints or preprints, and three letters of reference. Review of applications will commence June 1, 1994, and will continue until the position is filled. Send applications to: Cogni-University of California, Davis, CA 95616–8686. For more information, contact Neal Kroll in care of the above address or neakroll@ucdavis.edu. The University of California, Davis, is an Affirmative Action/Equal Oppor-tunity Employer with a strong institutional commitment to the achievement of diversity among its faculty and staff. In that spirit, we are particularly interested in receiving applications from persons of underrepresented groups including women, persons of color, special disabled veterans, Vietnam-era veterans, and persons with disabilities.

The Department of Medicinal Chemistry at the University of Georgia College of Pharmacy invites applica-tions for a tenure-track ASSISTANT/ASSOCIATE PROFESSOR position, effective January 1, 1995. The successful applicant will carry out an independent, active and innovative extramurally funded research program in bioanalytical chemistry that complements current faculty activities in chromatography and capillary electrophoreactivities in chromatography and capillary electrophore-sis. Applicants for this position should be interested in teaching in a professional curriculum with a commitment to the mentoring and education of graduate students. We seek applicants interested in developing collaborative research ties to faculty at the University of Georgia, the Medical College of Georgia and other institutions. Experience in mass spectrometry and its application to LC and CZE separations is desirable. Send complete curriculum vitae, a summary of current research, a concise outline of future research plans and funding possibilities, plus the names of at least three references to: Dr. Peter C. Ruenitz, Department of Medicinal Chemistry, Col-Ruentz, Department of Medicinal Chemistry, Col-lege of Pharmacy, University of Georgia, Athens, GA 30602–2352 by August 31, 1994. Salary will be com-mensurate with experience. The University of Georgia is an Equal Opportunity/Affirmative Action Employer and actively seeks the candidacy of minorities and women.

RHEUMATOLOGIST-NORTHWESTERN UNIVERSITY MEDICAL SCHOOL: Full-time position available for academic rheumatologist with research interests in molecular mechanisms of inflammaapointment in the Division of Arthritis-Connective Tissue Diseases at the rank of ASSISTANT PROFES-Tissue Diseases at the rank of ASSISTANT PROFES-SOR. Highly competitive salary and benefit package. Send curriculum vitae and reply to: Richard M. Pope, M.D., Chief, Arthritis Division, Northwestern Uni-versity Medical School, 303 East Chicago Avenue, Ward 3-315, Chicago, IL 60611. Equal Opportunity Employer, M/F.

POSITIONS OPEN

ASSISTANT PROFESSOR/ ASSOCIATE PROFESSOR

The Hormel Institute, a lipid research center of the University of Minnesota, invites applications for a faculty appointment at the level of Assistant or Associate Proessor. Qualifications: Candidates must demonstrate the ability to establish an independent, extramurally fundable research program of biomedical or technological relevance that will complement ongoing programs. Preference will be given to applicants with a strong background in **molecular/cell biology**, and a successful research record in areas related to cell signaling and the regulation of membrane-dependent cellular functions. A Ph.D. (or equivalent) degree and 2 to 3 years of postdoctoral experience are required. Individuals with additional research experience and with excellent organizational, supervisory, and communication skills are desired. A com-plete application consists of curriculum vitae, a research plan, and the names of three references received no later than June 1, 1994, by: Dr. H. H. O. Schmid, Director, The Hormel Institute, 801 16th Avenue NE, Austin, MN 55912. The University of Minnesota is an Equal Opportunity Educator and Employer.

ASSISTANT PROFESSOR OF MOLECULAR DERMATOLOGY. The College of Physicians and Surgeons of Columbia University, Department of Dermatology is currently seeking a full-time, tenured faculty member. The candidate must have a Ph.D. degree and a strong research background in molecular biology and

regulation of gene expression. The successful applicant will be responsible for direct-ing a research program in molecular biology and regula-

Ing a research program in molecular biology and regula-tion of gene expression relevant to cutaneous biology. Qualified applicants must be board certified or board eligible in Dermatology. Interested applicants are invited to mail curriculum vitae, with a cover letter, directly to: David R. Bickers, M.D., Carl Truman Nelson Professor and Chairman, Demotement of Demotology. Department of Dermatology, Columbia Presbyterian Medical Center, 161 Fort Washington Avenue, Suite 1410, New York, NY 10032.

Columbia University is an Equal Opportunity/Affirmative Action Employer.

NEUROBIOLOGIST

The Department of Biology of Utah State University The Department of Biology of Utah State University (USU) invites applications for a tenure-track faculty position at the rank of **ASSISTANT PROFESSOR**. The appointed person is expected to direct an externally funded research program in **NEUROBIOLOGY** com-bining physiological approaches with molecular, cellu-lar, or organismal methods. The specific research area is open although applicants with interests that comple-ment those of the current faculty will be favored. An ability to integrate into a large department with diverse ability to integrate into a large department with diverse research and teaching interests is important. Teaching responsibilities include an undergraduate course in comparative animal physiology and upper division/ graduate course work in neurobiology. Excellent labo-ratory facilities are available. A Ph.D. degree in an area related to the neurosciences and a legal right to work in the United States are required. Postdoctoral research experience is highly desirable. Applicants must send curriculum vitae, a statement of research plans, and names and addresses of three references to: Dr. Jon Y. Takemoto, Chair, Neurobiologist Search Committee, Department of Biology, Utah State University, Logan, UT 84322–5305. Screening of applicants will begin July 1, 1994, and will continue until a suitable person is selected. USU is an Equal Opportunity/Affirmative Action Employer.

HARVARD UNIVERSITY. The Department of Psychology seeks to make a SENIOR APPOINT-MENT in the area of cognitive psychology with partic-ular focus in psycholinguistics or reasoning. Familiarity with multiple research methodologies is desirable. Applicants must have an international reputation and active research program. Candidates are also expected to teach research program. Candidates are also expected to teach and advise at the graduate and undergraduate level. Candidates should indicate their interest by writing to: Robert Rosenthal, Chair, Department of Psychology, Harvard University, 33 Kirkland Street, Cambridge, MA 02138. Curriculum vitae and selected publications should be included. Closing date for application is May 15, 1994. Applications from women and minority candidates are especially welcome. Harvard University is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

DEPARTMENT OF MICROBIOLOGY COLORADO STATE UNIVERSITY Faculty Position, Molecular Biology of Bacterial Pathogenesis

The Department of Microbiology at Colorado State University invites applications for a tenure-track ASSIST-ANT or ASSOCIATE PROFESSOR position to ad-dress the molecular biology of bacterial pathogenesis. Preference will be given to candidates employing molec-ular biology and biochemical approaches to investigation of fundamental processes in the interaction of bacterial pathogen and host. Candidates should possess the Ph.D., D.V.M./Ph.D., M.D./Ph.D. or equivalent degree, and relevant postdoctoral research experience. The successful applicant will be expected to sustain an innovative extramurally funded research program that complements the existing interdepartmental University Program of Reexisting interdepartmental University Program of Re-search and Scholarly Excellence in Infectious Diseases and Immunology. Direction of graduate students and teaching at the undergraduate and graduate levels are crucial responsibilities of this position. Applicants should send curriculum vitae, a statement of research interests and curriculum vitae, a statement of research interests and goals, and a list of at least three references by May 31, 1994, to: Dr. Patrick J. Brennan, Search Committee Chair, Department of Microbiology, Colorado State University, Fort Collins, CO 80523; Tele-phone: 303-491-6700. Salary negotiable. Colorado State University is an Equal Opportunity/

Affirmative Action Employer.

The Department of Psychiatry and Behavioral Sci-ences at Stanford University School of Medicine is seeking to fill the position of **ASSOCIATE PROFES-SOR** (Research) of Psychiatry and Behavioral Sciences. This is a non-tenure-track appointment. The major focus of this appointment is in the area of psychosocial intervention and health. Desired areas of substantive intervention and nearn. Desired areas or substantive interest and expertise include: intervention targeting health and psychosocial outcomes, substance use and other health risk behaviors, doctor-patient relations, and psychological reactions to trauma and pain. Methodological expertise is sought in coordinating large intervention research projects and in recruiting and maintaining follow-up with research participants from diverse populations. Qualifications also include a com-pleted doctoral degree, relevant postdoctoral research and teaching experience, and a publication record. Application closing date is 30 days after publication of this advationment. this advertisement. Stanford University is committed to increasing representation of women and members of minority groups on its faculty and particularly encourages applications from such candidates. Please send curriculum vitae and the names of five references to: David Spiegel, M.D., Professor and Chair of Search Committee, Depart-ment of Psychiatry and Behavioral Sciences, School of Medicine, Stanford University, Stanford, CA 94305.

ASSOCIATE DEAN FOR BIOMEDICAL SCIENCES

The School of Medicine of the State University of New York at Stony Brook is seeking an Associate Dean for Biomedical Sciences. The University Medical Center at Stony Brook is the only comprehensive university medical center on Long Island. It is an integral part of the Health Sciences Center on the campus of the State University of New York at Stony Brook, located ap-proximately 50 miles from New York City. SUNY Stony Brook is a comprehensive research university with over 17,000 students and more than 100 degreegranting programs. Responsibilities of the Associate Dean for Biomedical Sciences include: supporting the research program of the basic science and clinical research faculty of the School of Medicine, supporting interdisciplinary research efforts and medical school/ industry alliances, supporting interdisciplinary gradu-ate education goals, advising the dean regarding allocation of research resources, and administration of the School of Medicine's Medical Scientist Training Program. The individual must hold a doctorate degree and be qualified for a senior faculty appointment. The State University of New York is an Equal Opportunity Employer and qualified minority candidates are particularly solicited. Applications will be accepted until May 15, 1994. Correspondence should be addressed to the Chairman of the Search Committee: Thomas S. Cot-reall. MD. Executive Associate Deep School of trell, M.D., Executive Associate Dean, School of Medicine, University at Stony Brook, Stony Brook, NY 11794-8430.

POSTDOCTORAL/ RESEARCH ASSOCIATE POSITIONS

Postdoctoral/research associate positions available for molecular and cellular biologists to study the regulatory mechanisms controlling proliferation and differentiation. Program interests emphasize two separate areas: the differentiation of keratinocytes and the growth regulatory activities that control the cell cycle. Experience with standard molecular biological techniques, protein analysis, and cell culture is required. Candidates must have a Ph.D. or equivalent. Excellent environment and competitive salary. Send curriculum vitae and the names, addresses, and telephone numbers of three references to: W.J. Pledger, Ph.D., H. Lee Moffitt Cancer Center and Research Institute, 12902 Magnolia Drive, Tampa, FL 33612-9497.



H. LEE MOFFITT CANCER CENTER & RESEARCH INSTITUTE

Moffitt Cancer Center is an Equal Opportunity Employer.

POST DOCTORAL POSITIONS AVAILABLE AT PROCEPT, INC.

Funded by the National Cooperative Drug Discovery Group of the National Institutes of Health for Design and Synthesis of Anti-AIDS Drug Candidates

POST DOCTORAL POSITION COMPUTATIONAL CHEMISTRY

This position is dedicated to the CD4/gp120 structurebased design of inhibitors using novel computational approaches. This is a joint endeavor pursued with our collaborators at Harvard University and the University of California, San Francisco. Requires a Ph.D.

POST DOCTORAL POSITION SYNTHETIC CHEMISTRY

This position is for a creative organic chemist who will synthesize CD4/gp120 inhibitors that bind to or mimic CD4 or gp120. This project offers a unique opportunity for a creative chemist to translate structural concepts to the design and synthesis of small molecule drug candidates. This project is pursued in collaboration with MIT and Harvard investigators. Requires a Ph.D.

Modern tools of drug discovery available at Procept include on-site 250 and 500 MHz NMR, access to 750 MHz NMR, and modern synthetic and molecular modeling facilities. These projects represent cutting edge drug discovery research and are expected to result in high quality publishable results.

Procept offers a comprehensive benefits and compensation package. Please send your curriculum vitae to: Jean Fletcher, Director of Human Resources, Procept, Inc., 840 Memorial Drive, Cambridge, MA 02139. Procept is an equal opportunity employer.



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

CARDIOVASCULAR PHARMACOLOGY

The Pharmacology Department is currently seeking a BS/MS level research associate to assist in ongoing cardiovascular research efforts. This position requires prior experience with in vitro pharmacological methods including isolated tissue systems. Understanding of data analysis and statistics would be desirable. (Job Code: OA-SC-CT-001)

PHARMACOLOGY

This position requires a BS/MS in Biology or related discipline, and experience in using in vivo models to test the efficacy of anti-inflammatory compounds. HPLC and immunoassay experience is desirable. (Job Code: OA-SC-AC-001)

NEUROBIOLOGY

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This position requires either 5 years' experience (with a BS) or 2 years' experience (with a MS) in broad aspects of Molecular Biology - especially in the expression cloning of receptor protein. Tissue culture experience is also required. (Job Code: OA-SC-HY-001)

PROTEIN CHEMISTRY

Research associates are sought to work with scientists in the Protein Chemistry Department. Ongoing projects encompass studies in tissue factors, neurobiology, inflammation and hematopoiesis. These positions require a BS/MS degree in Biochemistry or a related field and relevant laboratory experience in protein purification. Knowledge of chromatography (HPLC and FPLC) and electrophoresis is desirable. (Job Code: OA-SC-KW-001)

All positions require strong oral and written communication skills as well as a high degree of organization and computer literacy.

At Amgen, you'll find our approach to scientific research as rewarding as it is effective. We offer a highly competitive compensation and benefits package that includes a retirement and savings plan, an on-site fitness center, and three weeks' vacation. Please FAX/mail your resume/c.v. to: FAX: (805) 447-1985. Amgen, Inc., Staffing, Job Code (see above), Amgen Center, Thousand Oaks, CA 91320-1789. For additional information regarding Amgen's recruitment process, please call (805) 447-4150. Principals only, please. EEO-Affirmative Action Employer M/F/D/V.





STRATEGIES FOR PREDICTING CHEMICAL CARCINOGENESIS IN RODENTS

The National Toxicology Program conducts highly standardized rodent bioassays for toxicity and carcinogenicity. These assays provide a unique opportunity to prospectively evaluate methods that might serve as complementary procedures or alternatives to the bioassay.

This announcement is prompted by the success of the recent International Workshop on Predicting Chemical Carcinogenesis in Rodents, held at the National Institute of Environmental Health Sciences on May 24 and 25, 1993 [Wachsman et al., Environ. Health Perspect. 101 (1993) 444-445]. It is designed to promote the continued growth of the predictive process by encouraging the widest possible participation in the development and refinement of alternative strategies.

The following chemicals, currently being tested for rodent carcinogenicity, will form the basis for the next challenging round of the prediction validation process.



Participants are invited to present their predictions in manuscript form and to include both the rationale behind each prediction as well as some estimate of the potency of each projected carcinogen, using any preferred definition of this parameter. Manuscripts should be sent to NIEHS and, in addition, be submitted for review and publication in Environmental Health Perspectives or any other high quality peer-reviewed journal. To insure that predictions are made prior to completion of bioassays, a deadline of December 31, 1995 has been established. Upon request, NIEHS will provide participants with information on the dosage, genetic toxicology, purity, and route of administration of each chemical, as well as access to information available on metabolism, distribution, and toxicity. Participants using an experimental approach to the predictive process can request samples of each chemical. For additional information contact:

Dr. J.T. Wachsman, NIEHS, B3-09, P.O. Box 12233, Research Triangle Park, NC 27709 or FAX: 919-541-1460



OSIRIS THERAPEUTICS, INC. BioOrthopaedics for Cartilage, Bone and Soft Tissue Regeneration

Osiris Therapeutics is a developer of cellular transplants and cell-matrix products to regenerate injured or defective mesenchymal tissues such as bone, cartilage, ligament, muscle and marrow stroma. The Company is seeking highly motivated, creative scientists to direct and conduct research and product development using the Company's patented stem cell technology. Opportunities exist for Research Managers and Scientists (M.D./Ph.D.) and Research Associates (M.S./B.S.).

Director of Process Development

We are seeking an individual with broad-based industrial experience with focus in the area of biotechnology. Specifically, this position will be responsible for all cell culture operations, media optimization and scale-up of cell systems leading to tissue-engineered products. This individual will be able to take research-level cell culture processes, and transform these to pilot plant/manufacturing operations. Process development/manufacturing experience including validation, documentation, SOPs and implementation of GMP is important. Clean room, aseptic processing and experience with culture/expansion of hematopoietic stem cells or other primary cells is desirable.

Senior Research Scientist--Gene Therapy

Immediate opening for experienced Ph.D.M.D. scientist with 2-5 years postdoctoral experience in stem cell or progenitor cell gene transfer technology. Research projects will focus on gene therapy for musculoskeletal gene defects, acquired tissue disorders and the *in vivo* production of therapeutic drugs in differentiated mesenchymal tissues. The successful candidate will combine strong basic science skills with an ability to develop therapeutic endpoints in both animal and clinical models.

The Company offers competitive wages and benefits and an attractive stock option plan. Prospective candidates are encouraged to send resumes and supporting credentials to: Osiris Therapeutics, Inc., P.O. Box 1980, Cleveland, Ohio 44106-0180. We are an affirmative action/equal opportunity employer. The United States Department of Energy 1 9 9 5

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DOE Distinguished Postdoctoral Research Program Science/Engineering Education Division Oak Ridge Institute for Science and Education P.O. Box 117 Oak Ridge, Tennessee 37831-0117

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Education Programs

R&D SOLVENTS

APPLICATION CHEMIST

Burdick & Jackson, a division of Baxter Healthcare Corporation and a leading manufacturer of high purity solvents and high quality chromatography products, is currently seeking an R&D Solvents Application Chemist.

A BS in chemistry or biochemistry, with 3-5 years industrial experience in research and/or manufacturing environments is needed. Familiarity with DNA characterization, as well as the technical requirements, marketplace and users of DNA synthesizers are a plus. Good organizational skills, familiarity with computers, and the ability to communicate effectively in both oral and written formats are a must. Limited travel required.

We offer an excellent starting salary, outstanding benefits package, and career opportunities. For immediate and confidential consideration, please send your resume with salary history/expectations to: Wayne S. Kahrs, HR Manager, Baxter, Burdick & Jackson, 1953 S. Harvey Street, Muskegon, MI 49442. Equal Opportunity Employer.

Baxter

Enter a New Dimension of Gene-Based Therapies

Position yourself at the forefront of biotechnology science at VIAGENE, INC.—an industry leader dedicated to the research, development and manufacture of gene transfer drugs for the treatment of life-threatening diseases and genetic disorders. To enhance our technological expertise, we are currently seeking experienced scientists for bench and project manager-level positions:

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We are also looking for a **REGULATORY AFFAIRS MANAGER** with 5-10 years' experience in the Pharmaceutical/Biotechnology Industry.

Discover a company whose technology is consistent with its mission: to improve and save lives. Send your resume to: VIAGENE, INC., Human Resources, 11055 Roselle St.,



National Cancer Institute • National Institutes of Health Public Health Service

Cancer Prevention Fellowship Program

The Division of Cancer Prevention and Control (DCPC), NCI, is accepting applications for the Cancer Prevention Fellowship Program (CPFP). The purpose of this program is to train individuals from a multiplicity of health science disciplines in the field of cancer prevention and control. The program provides for: Master of Public Heath training (at accredited university programs); Participation in the DCPC Cancer Prevention and Control Academic Summer Course (open to all physicians and scientists interested in learning the principles and practice of cancer prevention and control); Working at DCPC directly with individual preceptors on cancer prevention and control projects; Brief field assignments in cancer prevention and control programs at other institutions. Funding permitting, as many as ten Fellows will be accepted for up to three years of training, beginning July 1, 1995. Benefits include selected relocation and travel expenses, paid federal holidays, and participatory health insurance.

Eligibility

M.D., D.D.S., or D.O. from a U.S., territorial, or Canadian Medical School. Foreign medical graduates must have current ECFMG/FMGEMS or USMLE certification and appropriate experience, e.g., one year residency in a training program approved by the Accreditation Council for Graduate Medical Education.

Or

Ph.D., Dr.P.H. or other doctoral degree in a related discipline (epidemiology, biostatistics, and the biomedical, nutritional, public health or behavioral sciences). Foreign education must be comparable to that received in accredited U.S., territorial, or Canadian institutions.

Plus

U.S. citizenship or resident alien eligible for citizenship within four years.

For details and an application catalog either call, fax or send a postcard or letter with your name and home address to:

Douglas L. Weed, M.D., M.P.H., Ph.D. Director

Cancer Prevention Fellowship Program Division of Cancer Prevention and Control National Cancer Institute

Executive Plaza South, T-41 Bethesda, MD 20892

Further Inquiries: Mrs. Barbara Redding TELEPHONE(301) 496-8640 FAX(301) 402-4863

Deadline for receipt of applications: September 1, 1994



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POSITIONS OPEN

MOLECULAR BIOLOGIST

RESEARCH ASSISTANT PROFESSOR to study transcription factors in hormone action and aging. Post-doctoral experience in DNA-protein interaction and ex-pression cloning is required. Send curriculum vitae and names of three referes to: Arun K. Roy, Ph.D., Pro-fessor of Cellular & Structural Biology, The Univer-sity of Texas Health Science Center at San Antonio, 7703 Flord Cred Data Data Science Conter at San Antonio, 7703 Floyd Curl Drive, San Antonio, TX 7284– 7762. The University of Texas Health Science Center at San Antonio is an Equal Employment Opportunity/Affirmative Action Employer.

JUNIOR FACULTY POSITION SECTION OF IMMUNOBIOLOGY YALE UNIVERSITY

The Section of Immunobiology seeks applicants for a junior faculty position. Qualified applicants in all areas of immunobiology are invited to apply. We are partic-ularly interested in candidates who will complement the existing faculty. Research interests represented within the Section of Immunobiology include T lymphocyte activation, differentiation and tolerance; T lymphocyte development; antigen processing and presentation; reascriptional regulation; cytokines; immunoglobulin gene rearrangement and autoimmunity. Candidates are expected to develop an independent research program and to participate in departmental teaching. The Section and to participate in departmental teaching. The Section of Immunobiology is committed to increasing representation of members of minority groups and women on the faculty and particularly encourages applications from such candidates. A candidate's application package must include curricu-lum vitae, a summary of present and future research interests and three letters of recommendation. Com-pleted applications should be received at the address below no later than June 15, 1994. Dr. Kim Bottomly, Vale c/o Administrator, Section of Immunobiology, Yale University School of Medicine, P.O. Box 208011, New Haven, CT 06520-8011. An Equal Opportunity/ Affirmative Action Employer. Women and minority candidates are encouraged to apply.

BILKENT UNIVERSITY FACULTY POSITIONS IN MOLECULAR BIOLOGY AND GENETICS

A new department of Molecular Biology and Genetics is being established in the Faculty of Science of Bilkent University. Undergraduate and graduate programs are planned to be initiated in the fall of 1995. The depart-ment is being equipped with modern research facilities and excellent environment to carry out basic molecular biology research. Research facilities will include well-equipped laboratories, a good library, excellent computer and network systems, and modern working conditions. There are three major teaching hospitals and medical schools in the area to encourage collaboration and interdisciplinary research.

Applicants at the level of professor and assistant pro-

Applicants at the level of professor and assistant pro-fessor are invited for faculty positions to coordinate research programs and to participate in undergraduate and graduate teaching and thesis supervision. Rank and salary will depend on experience and quali-fications. Salary is competitive and incorporates regular cost of living adjustments. Free, fully furnished on-campus housing is provided. Please send résumé and names of three references to the: Search Committee for MBG Executy of Science 06553. Biltent Ankaza MBG, Faculty of Science, 06553 Bilkent, Ankara Turkey. Further information can be obtained by mail or through E-mail:science@fen.bilkent.edu.tr.

ZOOLOGY/NUTRITION

BLOOMSBURG UNIVERSITY'S Department of Biological and Allied Health Sciences has a full-time, tenure-track position for a Zoologist/Nutritionist beginning in late August 1994. Primary responsibility will be to teach undergraduate courses in human nutri-tion and zoology/biology. A Ph.D., preferably in zool-ogy, with education in nutrition is required. Send a letter of application, curriculum vitae, official under-graduate and graduate transcripts, and three letters of recommendation to: James E. Cole, Ph.D., Chairperson, Z/N Search Committee, Department of Biolog-ical & Allied Health Sciences, Bloomsburg Univer-sity, Bloomsburg, PA 17815. Deadline is May 6, 1994. Bloomsburg University is an Equal Opportunity/ Affirmative Action Employer.

POSITIONS OPEN

DEPARTMENT HEAD Department of Rangeland Ecosystem Science Colorado State University (CSU)

The Department seeks an individual with vision, leadership qualities, and effective administrative and communication skills. Candidates must have a doctoral degree and extensive experience in range science or a related field. Candidates must demonstrate competence in the following areas: (a) academic and/or research administration; (b) undergraduate and graduate teaching; (c) basic and/or applied research as shown by contracts, grants and publications; (d) public service through extension, professional society activities, and interactions with clientele; and (e) interpersonal and communication skills. Send a letter of interest and a résumé of professional experience detailing academic and administrative responsibilities, teaching and advising activities, publications, research projects conducted and professional service contribu-tions. Position available January 1995. Each applicant should forward a statement, one to two pages, presenting his/her vision of the role of an academic department in the natural resources field and provide name, title, ad-dress and telephone number for five references. Forward applications by June 15, 1994, to: Lee E. Sommers, Chairman, Rangeland Ecosystem Science Depart-ment Head Search, 102 Natural Resources Building, Colorado State University, Fort Collins, CO 80523.

CSU is an Equal Employment Opportunity/Affirmative Action Employer. Employment Opportunity Office: 21 Spruce Hall.

CHAIR DEPARTMENT OF NEUROBIOLOGY SCHOOL OF MEDICINE University of California, Los Angeles (UCLA)

The UCLA School of Medicine is seeking a distin-guished scientist to serve as Chair of the newly organized Department of Neurobiology. We are concurrently seek-ing candidates for the Eleanor I. Leslie Endowed Chair in Neuroscience.

The Chair of this basic science department will be responsible for medical school and graduate education in the areas of neuro-anatomy and cell biology, and for leadership of an active program of research in the neurosciences

Interested applicants should have strong records of significant research accomplishments and a commitment to excellence in graduate education and research. Applications, including curriculum vitae, should be sent within six weeks to:

John C. Mazziotta, M.D., Ph.D. Chair, Neurobiology Chair Search Committee c/o Ann Pollack, Dean's Office 12-138 CHS UCLA School of Medicine Los Angeles, CA 90024-1722 UCLA is an Affirmative Action/ Equal Opportunity Employer.

CHIEF, ILLINOIS STATE GEOLOGICAL SUR-VEY (ISGS). Provide scientific leadership and adminis-trative direction to staff of approximately 200 scientific and technical support personnel conducting basic and applied research. Candidates should have a Ph.D. in geosciences with an established research record; demonstrated ability of leadership and administration of a multidisciplinary organization involved in research and service; a record of adherence to EEO guidelines; articulate and persuasive oral and written communication skills; and the ability to attract funding for research. To apply, send letter of application, names and addresses of referees, and résumé by July 1, 1994, to: Chairman, Chief Search Committee, Illinois State Geological Survey, 615 East Peabody Drive, Champaign, IL 61820, Telephone: (217) 244-2776. ISGS is an Affirmative Action/Equal Employment Op-portunity and ADA Employer.

EDITOR, Journal of Clinical Pharmacology, Offi-cial Publication of the American College of Clinical Pharmacology. Eminence in the field of pharmacology, either basic, clinical, or both, is required. Experience as an editor, or as a member of editorial boards of scientific journals preferred, but not necessary. Interested and qual-ified candidates should submit current curriculum vitae by no later than July 31, 1994, to: American College of Clinical Pharmacology, Executive Office, 300 Oriskany Boulevard, Yorkville, NY 13495–1332.

POSITIONS OPEN

EDITORS-Working scientists at all levels are wanted for free-lance editing of manuscripts from Japanese researchers who wish to publish in English journals. We are particularly looking for biochemists and pharmacol-ogists. Please forward curriculum vitae as well as a list of the journals in which you have published or for which you have served as a peer reviewer. (Graduate students who lack this experience, but who have written papers and critiqued their colleagues' work are also encouraged to apply.) INTRANSCO, P.O. Box 5419, Magnolia, MA 01930. (No telephone calls, please.)

PURCHASE COLLEGE STATE UNIVERSITY OF NEW YORK VICE PRESIDENT FOR ACADEMIC AFFAIRS

Purchase College incorporates a School of the Arts and a College of Letters and Science. Purchase offers conser-vatory training in dance, music, theatre arts and film, and the visual arts, and distinguished liberal arts programs in the humanities, natural and social sciences. Its prestigious faculty is composed of scholars and artists. The College through its Division of Continuing Education. Purchase is also a major cultural center with a celebrat-

ed architectural design. Its extraordinary Performing Arts Center, and its renowned Neuberger Museum of Arts are among the finest in the nation.

The College enrolls approximately 4,000 students, with 1,700 in residence, and is located on 500 acres in Westchester County, one-half hour north of New York City. The Vice President for Academic Affairs is the Coll-

ege's chief academic officer, reporting directly to the President. The Vice President's responsibilities include facilitating the development and implementation of aca-demic policies and programs, oversight of the faculty evaluation and programs, oversignt of the faculty evaluation and promotion process, budget formulation, and supervision of student and instructional support services. The following offices report to the Vice Presi-dent: the Deans of all Divisions, the Directors of the Performing Arts Center, the Library and the Museum, as well as the Directors of Admission, Institutional Research, EOP and the Registrar.

Candidates must have an earned doctorate or equiva-lent and successful administrative experience in an aca-demic setting demonstrative of the knowledge, skills, and ability to meet the responsibilities of the position. They must also have a record of scholarly and professional accomplishment, a strong commitment to diversity in all aspects of college life and a demonstrated capacity to be an effective spokesperson for an academic community.

The salary is competitive. Women and minority candi-dates are encouraged to apply. The preferred starting date is July 1, 1994. Review of applications and nominations to begin immediately. Candidates should send a résumé, a letter of interest, supporting materials as appropriate, and the names and addresses of five references. Nominations should include the addresses and telephone numbers of nominees. Applications and nominations should be sent to: Dr. John R. Howard, Chair, Search Committee, Vice President for Academic Affairs, Purchase Col-lege, State University of New York, Purchase, NY 10577.

BACTERIAL PATHOGENESIS. The Department of Microbiology, University of Virginia, is expanding its program in molecular pathogenesis to complement existing strengths in molecular patieng near to compute output of the strength of t aspects of bacterial pathogenesis. Outstanding candidates with a Ph.D. or M.D. degree and postdoctoral experi-ence are invited to apply for this position. The successful candidate is expected to establish a successful, indepencandidate is expected to establish a successful, indepen-dent and interactive research program, and will have some teaching responsibilities. Applicants should submit curriculum vitae, a concise statement of research inter-ests, and selected reprints. These and three letters of reference should be sent to: Chair, Microbiology Search Committee, Department of Microbiology, Box 441, School of Medicine, University of Virginia, Charlottesville, VA 22908. Applications should be received by May 1, 1994. The University of Virginia is an Eard Omerunity differentive Action Employer and encour-Equal Opportunity/Affirmative Action Employer and encour-ages applications from women and minority scientists.

TENTH INTERNATIONAL SYMPOSIUM ON CELLULAR ENDOCRINOLOGY

"Molecular & Cell Biology of Apoptosis in Development, Disease and Cancer"

September 29-October 2, 1994

at Holiday Inn Sunspree Resort Lake Placid, NY

Sponsored By: W. Alton Jones Cell Science Center, Inc.



ORGANIZING COMMITTEE:

Dr. Martin Tenniswood, W. Alton Jones Cell Sci. Ctr. Dr. James L. Stevens, W. Alton Jones Cell Sci. Ctr. Dr. Gwyn T. Williams, Keele University

Topics include: Apoptosis in non-mammalian model systems; cell death in mammalian development; cell death in hormone dependent tissues; apoptosis in hematopoietic cells; cell death in disease; second messenger systems in apoptosis; stress response and survival.

SPEAKERS

Suzanne Bourgeois Nicholas Bruchovsky Wilfried Bursch J. John Cohen **Gerard Evan** Zvi Fuks **Pierre Golstein Michael O. Hengartner Pierre Henkart David Hockenbery Eugene Johnson Robert S. Kerbel Richard Kolesnick** Natasha Kyprianou **Jacques Landry Richard A. Lang**

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REGISTRATION FORMS MAY BE OBTAINED FROM: The Organizing Committee W. Alton Jones Cell Science Center, Inc. 10 Old Barn Road, Lake Placid, NY 12946 Tel: (518) 523-1252 • Fax: (518) 523-1849

Imagine The Possibilities

At Berlex, we've built our reputation on FDA-approved product successes and a proven track record in the pharmaceutical industry. To meet the challenges before us, we're seeking several Scientists to join our newly formed Immunology Department. Working on strategic development projects focused on Multiple Sclerosis and Inflammation, the selected candidates will be based at our Richmond facility in the San Francisco Bay Area. If you would like to make a major contribution with an internationally renowned team of topnotch scientists, imagine the possibilities at Berlex.

PhD-level Scientists responding to these positions will need a solid publication record along with at least 2 to 4 years' postdoctoral experience.

MOLECULAR BIOLOGISTS

Gene Expression

We seek a Molecular Biologist with experience in the regulation of gene expression to study the regulation of cytokine genes. Experience in the field of NF kB would be helpful. Proven work background in promoter analysis, in vitro transcription, footprinting, gel retardation assays, cloning of transcription factors, reporter systems and preparing assays for screening of potential transcriptional regulators required. Dept. B94-006.

Signal Transduction

Apply your Molecular Biologist expertise and experience in the field of cytokines/chemokines to study signal transduction mechanisms. Interferon experience would be beneficial. Experience with ligand binding and receptor analysis, protein kinases involved in signaling, analysis of early genes involved in stimulus response in endothelial and CNS cells required. Experience with cloning, transfection, plasmid construction, and PCR required. Dept. B94-008.

NEUROBIOLOGIST

Myelination/Demyelination

Position requires a Neurobiologist with molecular biology experience to study the effect of cytokines on astrocyte, microglia and oligodendrocyte functions (myelination and demyelination). Experience with cell culture, immunochemistry, Northern & Southern blotting, cell transfection, and cytokine receptors required. Dept. B94-007.

As a US subsidiary of an international Fortune 500 company, Berlex is proud to offer competitive salaries and a generous benefits package, which includes relocation assistance to our 53-acre Bay Area campus. To apply, send your CV/ resume, indicating the department number corresponding with your position of interest, to: BERLEX, HUMAN RE-SOURCES EMPLOYMENT, 15049 SANPABLOAVE., RICH-MOND, CA 94804-0099. EOE. Principals only please.



The Best Is Yet To Come



THE UNIVERSITY OF AUCKLAND - NEW ZEALAND

APPOINTMENT OF VICE-CHANCELLOR

The Council of the University of Auckland invites applications for the position of Vice-Chancellor which will become vacant at the end of 1994 following the retirement of Sir Colin Maiden.

Established in 1883, the University of Auckland has a student roll of 22,500 in ten faculties and employs some 2,600 academic and general staff.

The Vice-Chancellor is the Chief Executive Officer of the University responsible to the Council for the academic and administrative affairs of the University, and is the employer of all University staff.

The University of Auckland is New Zealand's largest university, with an international reputation in many disciplines. It strives for the highest standards in scholarship and research while facing the challenge of increased enrolments and financial constraints.

The appointee may not necessarily have spent a working life in a university but should have a clear understanding of universities and their function. The person appointed will have a respected record of academic and administrative achievements, leadership and skills which will ensure that the University of Auckland meets its prime goals. These goals include providing research-based teaching of high quality, carrying out high level research, giving its staff and students the opportunity for creative work, acting as a focus for scholarship and debate within the community and contributing towards New Zealand's social, cultural and economic wellbeing.

Applications close with the Chancellor at the University of Auckland on 1 May 1994.

Further information and method of application is available from the following:

Mr Warwick Nicoll, Registrar, University of Auckland, Private Bag 92019, Auckland 1, New Zealand, telephone (64) 9 373-7517, fax (64) 9 373-7407.

Association of Commonwealth Universities, 36 Gordon Square, London WC1H 0PF, England, telephone (44) 71 387-8572, fax (44) 71 383-0368.

HON. JUSTICE SIR IAN BARKER, CHANCELLOR

The University has an EEO policy and welcomes applications from all qualified persons

UNITED ARAB EMIRATES UNIVERSITY FACULTY OF MEDICINE & HEALTH SCIENCES

ASSISTANT/ASSOCIATE PROFESSOR DEPARTMENT OF PHYSIOLOGY

Applications are invited for the above position in the Faculty of Medicine and Health Sciences, a newly developing Medical School founded in 1986.

Individuals should have experience and interest in the teaching of undergraduate and postgraduate medical students. The Department places special emphasis on the integrative role of Physiology in the curriculum founded on the concept of problem based learning. Fluency in English is essential as this is the language of instruction.

Applicants must have credible research record with appropriate publications and be prepared to join faculty colleagues in departmental and administrative duties as assigned by the Head of Department.

Benefits for this position are of the highest order and include a competitive tax-free salary, free accomodation, furniture allowance and assistance with children's tuition fees (for up to 3 children). Also provided is an interest free car loan and cash-in-lieu of equivalent annual return air fares to the country of residence. An award of 8.6% of the gross annual salary is paid after each year of service.

The Emirates offers a very attractive and secure lifestyle with all the amenities and facilities of any modern society. Interested applicants may apply for this position by forwarding a comprehensive curriculum vitae, list of publications and names and addresses of four referees to:

Mr Melvin Fraser, Director of Personnel, Faculty of Medicine and Health Sciences, United Arab Emirates University, P O Box 17666, Al Ain, United Arab Emirates. Fax No 00971-3-657649 Applications will be closed 4 weeks after the date of publication.



In the TNF-receptor/-Antogonist group of the department Pharma Research positions are open for a

Laboratory Leader and Postdoctoral Research Associate

Applications for the permanent position of a laboratory leader are invited from experience molecular/cell biologists with postdoctoral training. The postdoctoral position offers a two year contract with optional renewal for a third year. Applications are invited from recent Ph.D.'s with preferably one year postdoctoral experience.

The aim of the TNF group is to develop novel TNF antagonistic therapeutic strategies from a thorough understanding of molecular and cellular cytokine biology. Preference will be given to candidates with experience in advanced molecular biology techniques and experience in cell culture. Both positions in the context of the overall goal of the project offer opportunities for exploratory research (see eg. Cell 73, 431/Nature 364, 798/J. Biol. Chem. 268, 26350, 1993).

Please direct informal enquiries to Dr. W. Lesslauer (41 61 688 5942). Interested principals may send their complete application documentation to Dr. Suzanne Gräzer, quoting reference Science 36/94/Grä.

F. Hoffman-La Roche Ltd., P.O. Box, Ch-4002 Basel, Switzerland



GLAXO INSTITUTE FOR MOLECULAR BIOLOGY

Research at the Glaxo Institute in Geneva is directed towards the discovery of novel molecular mechanisms that can be used as drug targets to treat serious diseases. In particular, research is focused on the CNS, allergies and inflammatory conditions. Because of recent important developments in our work on receptors and ion channels, three exciting opportunities have been created.

THREE POSTDOCTORAL POSITIONS IN MOLECULAR BIOLOGY

Nuclear Receptors.

The successful candidate will join a team studying the regulation of gene expression in leukocytes and in the brain.

Chemokine Receptors.

The successful candidate will join a team that is identifying novel chemokine receptors and characterising their roles in lung inflammation.

Ligand-gated Ion Channels. The successful candidate will join a team investigating a new class of ion channel.

The Institute has a strong publication record, which the appointee will be expected to maintain. Attendance and presentation at scientific meetings is encouraged, as well as collaborative research with academic groups.

We offer an excellent compensation and benefits package and significant opportunities for career development. Geneva, situated in a very attractive part of Europe, has many advantages as a place to live. The Institute for Molecular Biology is part of the Glaxo group, one of the world's most successful healthcare companies which has an outstanding reputation for the quality of both its research and products.

Informal enquiries can be directed to Dr. Timothy Wells (TNCW5312@ggr.co.uk, phone ++41 22 706 9824) for chemokine receptors, to Dr. John DeLamarter (JFD1410@ggr.co.uk, phone ++41 22 706 9731) for nuclear receptors or to Dr. Gary Buell (GB15879 @ggr.co.uk, phone ++41 22 706 733 for ion channels.

If you are interested in these positions, please send your curriculum vitae with a list of publications and the names of three referees to: Rita Gloor, Personnel Manager, Glaxo Institute for Molecular Biology S.A., 14, chemin des Aulx, 1228 Plan-les-Ouates, Geneva, Switzerland.



The MRC wishes to appoint a scientist with a distinguished record in molecular genetics, initially to the position of joint Head of the Genetics Division at the MRC Radiobiology Unit, Harwell, Oxfordshire. Council has decided that, on the retirement of the Radiobiology Unit's current director, Professor G E Adams in 1995, the Genetics Division will become a free standing MRC Unit. The successful candidate would be the director elect of the new Unit.

The Genetics Division, currently led by Dr B M Cattanach FRS, is one of the foremost mouse genetics laboratories in the world and houses a unique resource of mutations. The appointee will be responsible initially for setting up a research team to spearhead molecular genetics research and, subsequently, for providing leadership and strategic direction for the new Unit. A key role will be to extend existing and develop new collaborations with major research teams in the University of Oxford. Discussions are currently underway between the MRC and the University of Oxford with a view to establishing formal links between the Unit and the University in the context of both research opportunities and training. The postholder will also be expected to foster and extend links with other local and national genetics research

developments. He/she will be responsible to the MRC for the allocation and control of Unit resources, for the management of the Unit's staff and attached workers and for ensuring that the Unit's research programme contributes to MRC corporate strategy. The creation of this new MRC Unit provides an exciting opportunity to set up a cohesive programme of molecular genetics research at an establishment with an excellent record in this field and first class facilities for such work. The Unit will be established within an environment which offers exceptional opportunities for collaborative work. This, combined with the possibility of formal relationships being forged with the University make the post particularly attractive.

The salary is negotiable within the Council's Special Appointments Grade (equivalent to University Professorial Grade). Requests for assistance with relocation expenses will be sympathetically considered.

A job description and other additional information may be obtained from Dr Rob Bennett, MRC Headquarters Office, 20 Park Crescent, London W1N 4AL (telephone 071 636 5422, ext.6236).

Applications should include a brief outline of the applicants' plans for the strategic direction of the new Genetics Unit and brief future proposals for his/her personal research, together



with a curriculum vitae, an up-to-date publications list and the names and addresses of three referees. These should be sent, no later than 22 April 1994 to Sir Dai Rees, Secretary of the Council, at the above address.

An Equal Opportunities Employer.

POSITIONS OPEN

CHAIRMAN OF THE DEPARTMENT OF PHYSIOLOGY AND BIOPHYSICS FINCH UNIVERSITY OF HEALTH SCIENCES/ THE CHICAGO MEDICAL SCHOOL

Applications and nominations are invited for the Chair of the Department of Physiology and Biophysics. The Chair reports to the Dean of the Medical School and is responsible for providing academic and administrative leadership in research and in the education of medical, graduate, and postgraduate students. The candidate should have a keen interest and ability in teaching, an international reputation for scientific contributions in physiology, biophysics or closely related fields, and the leadership skills necessary to enhance the department's strengths in research, teaching and service.

FUHS/CMS is an 82-year-old private medical school located in a modern facility in a northern suburb of Chicago. The Chair will oversee an established department of nine doctoral-level faculty members with particular strengths in membrane transport, biophysics, endocrinology and neuroscience.

Applications will be accepted until May 1, 1994, and should include: curriculum vitae, a summary of current research, copies of representative publications, a description of teaching and administrative experience, and the names of three or more references. Send correspondence to: Charles P. Barsano, M.D., Ph.D., Chair of the Search Committee, Office of the Dean, FUHS/CMS, 3333 Green Bay Road, North Chicago, IL 60064. (Telephone: 708/578-3300, FAX: 708/578-3320.)

Affirmative Action/Equal Opportunity Employer.

FACULTY SCHOLAR POSITION IN THE DEPARTMENT OF BIOCHEMISTRY AND MOLECULAR BIOLOGY JEFERSON MEDICAL COLLEGE

The Department of Biochemistry and Molecular Biology of Jefferson Medical College invites applications and nominations for a faculty scholar position to develop and coordinate courses in biochemistry and molecular biology for medical students. Duties will include providing leadership defining topics to be covered, selecting teaching formats and developing innovative testing procedures to provide an intellectually exciting experience for both medical students and over ten faculty members who currently participate in teaching the courses. Duties will also include extensive consultation with faculty at our institution and other institutions in developing and evaluating the courses. Ideal candidates will have a good background in basic science and molecular biology in addition to extensive knowledge and a strong interest in current and future applications of the knowledge in these fields to clinical medicine. Applicants from both junior and senior scientists or academic clinicians will be welcome. Position is tenuretrack with level of appointment and salary dependent on academic qualifications of the candidate. The candidate should provide (a) complete curriculum vitae; (b) brief statement of special qualifications he or she may have for the position and (c) at least three letters of recommendation from individuals who may be consulted further.

tion from individuals who may be consulted further. Mail to: Dr. Darwin J. Prockop, Chair, Department of Biochemistry and Molecular Biology, Jefferson Medical College, Thomas Jefferson University, 233 South 10th Street, Philadelphia, PA 19107. Thomas Jefferson University is an Equal Opportunity.

Thomas Jefferson University is an Equal Opportunity/ Affirmative Action Employer.

POSTDOCTORAL POSITION MOLECULAR PLANT VIROLOGY THE OHIO STATE UNIVERSITY

Available immediately for up to three years. A person with postdoctoral experience is needed to conduct independent research to define the domains of the maize dwarf mosaic potyvirus (MDMV) genome that determine symptoms and host range. The successful applicant will be expected to prepare cDNA clones of MDMV strains; construct restriction site maps and full-length cDNA clones of MDMV strains; prepare infectious transcripts; identify transcripts that incite different symptoms and host ranges; and determine nucleotide sequences of genomic domain(s) implicated in differential symptoms and host ranges. Send curriculum vitae and three letters of reference to: Dr. Donald T. Gordon, Department of Plant Pathology, OARDC, The Ohio State University is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

FACULTY POSITION IN REPRODUCTIVE ENDOCRINOLOGY

The Division of Reproductive Endocrinology in the Department of Obstetrics, Gynecology and Reproductive Sciences invites applications for a tenure-track faculty position with a research focus in ovarian and/or endometrial physiology. Candidates should have a Ph.D. or M.D. and have demonstrated ability to conduct independent research and attract extramural funding. Strong background and experience in molecular genetics and cell biology essential. The candidate will be expected to focus on research goals of the Division of Reproductive Endocrinology and participate in the teaching of fellows and graduate students. Rank and salary will be commensurate with qualifications. Applicants should submit curriculum vitae, a brief statement of research interests, representative reprints and names and addresses of at least three references to: M. Yusoff Dawood, M.D., Division of Reproductive Endocrinology, The University of Texas Medical School at Houston, 6431 Fannin, Suite 3.204, Houston, TX 77030. The University of Texas is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

BIOLOGIST/BIOLOGICAL EDUCATOR. The Department of Biological Sciences at Idaho State University anticipates, contingent on funding, a tenure-track position for the fall of 1994. Applicants must hold a doctorate. Primary responsibilities include lower-division biological science courses, designing and coordinating laboratories, and participating in a doctoral program in biological education. Preference will be given to candidates with a demonstrated record of funding for innovative programs in undergraduate education. The position includes teaching at a satellite campus in Idaho Falls, Idaho, and on the main campus. This position will remain open until filled. Applicants should send a letter of application, curriculum vitae, and three letters of recommendation by May 6, 1994, to: Chairperson, Search Committee, Department of Biological Sciences, Box 8007, Idaho State University, Pocatello, ID 83209. Idaho State University is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION MOLECULAR BIOLOGY OF PROGRAMMED CELL DEATH

Two positions available in the laboratory of Dr. V. M. Dixit to investigate the mechanism by which cells become resistant to cytokine killing and to identify components of the death pathway. Recent relevant publications from the laboratory include: *JBC* (1993) 267:12A24, *JBC* (1992) 267:17971, *JBC* (1992) 267:24157, *JBC* (1993) 268:5032, JBC (1994) 269:3633. Submit curriculum vitae and three references to: Dr. V. M. Dixit, University of Michigan, Department of Pathology, Box 0602, Ann Arbor, MI 48109. A non-discriminatory, Affirmative Action Employer.

HARVARD/POSTDOCTORAL POSITIONS are available to study molecular mechanisms of atherosclerosis and hypertension with special emphasis on transcriptional regulation and biological function of genes important for growth and differentiation of vascular endothelial and smooth muscle cells (endothelin, HB-EGF, and a recently cloned novel gene, ASG-1). Experience with molecular biology or protein chemistry is required. Please send curriculum vitae and names of three references to: M. E. Lee, M.D., Ph.D., Cardiovascular Biology Laboratory, Building 2, Room 129B, Harvard School of Public Health, 665 Huntington Avenue, Boston, MA 02115.

A POSTDOCTORAL POSITION is available for the study of DNA repair inherited in human disease. The focus of this research project will be the definition of molecular action of genes correcting repair deficiencies. Experience in laboratory techniques of cell culture and molecular biology is required. Send curriculum vitae and the names of three references to: T. K. Hyatt, Molecular and Medical Genetics, L103, Oregon Health Sciences University, 3181 S.W. Sam Jackson Park Road, Portland, OR 97201–3098. OHSU is an Affirmative Action/Equal Employment Opportunity Employer. (UPAR# 1659).

POSITIONS OPEN

POSTDOCTORAL POSITION available to study molecular and cellular mechanisms involved in signalling and regulation of thromboxane receptors. Project will focus on structure/function relationships in G-protein coupling and receptor desensitization. Ongoing research includes analysis of thromboxane receptor gene regulation and thromboxane effects in vascular smooth muscle and platelets. Ours is a well-funded laboratory of Ph.D.'s, M.D.'s and M.D./Ph.D.'s working together to characterize thromboxane's role in platelet-vascular interactions. Interested parties should send curriculum vitae and references to: Gerald W. Dorn II, Associate Professor of Medicine/Cardiology and Pharmacology and Cell Biophysics, University of Cincinnati Medical Center, 231 Bethesda Avenue, ML0542, Cincinnati, OH 45267-0542. FAX: (513) 558-3116. The University of Cincinnati is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION— VIRAL PROTEASES

A postdoctoral position is available to study the role of viral proteases in cytopathology. The successful candidate will design and conduct enzymology studies with wild-type and mutant forms of HIV protease and determine their preferences for cellular targets as well as study protective effects of synthetic and natural inhibitors of the proteases. This is a good chance to work with a multidisciplinary group of enzymologists, structural and cell biologists and medicinal chemists on an important disease target. Enzymology or molecular cell biology training is desirable. Send curriculum vitae, statement of research interests and names of three references to: Mary Jeannette, The DuPont Merck Pharmaceutical Company, Postdoctoral Program, Position #94-BDK, P.O. Box 80400, Wilmington, DE 19880–0400.

YALE UNIVERSITY POSTDOCTORAL POSITION

Available to study the use of triplex DNA to produce targeted mutagenesis in mammalian cells. Please send curriculum vitae to: Peter M. Glazer, M.D., Ph.D., Yale University, Boyer Center for Molecular Medicine, 295 Congress Avenue, New Haven, CT 06510, or FAX to: (203) 737-2630.

POSTDOCTORAL POSITION

A funded postdoctoral position is available immediately in the area of hemostasis, studying the mechanism of gamma-carboxylation of the vitamin K-dependent proteins. The research will involve structure-function analysis of both factor IX and the vitamin K-dependent carboxylase. Experience in molecular biology and biochemistry is preferred. Please send/FAX curriculum vitae, list of publications, a brief summary of research experience and the names of three references to: Dr. Kathleen Berkner, Department of Cell Biology, NC 10, Cleveland Clinic Foundation, Research Institute, 9500 Euclid Avenue, Cleveland, OH 44195. FAX: (216) 444-9404.

POSTDOCTORAL POSITION IN DNA RE-PAIR. Position available to determine structure-function relationships in the MutL protein of *E. coli*. The project will involve the isolation of novel mutations in the *mutL* gene and the subsequent characterization of mutant proteins including ability to interact with other components of the MutHLS system. Send curriculum vitae and the names of three references to: Dr. M. G. Marinus, Department of Pharmacology, University of Massachusetts Medical School, 55 Lake Avenue, Worcester, MA 01655. The University is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION, MYOCARDI-AL ENERGY METABOLISM AND VENTRICU-LAR FUNCTION. Opportunity to study relations between myocardial high energy phosphate and substrate metabolism and cardiac function in intact animal models. Experience in *in vivo* NMR spectroscopy, coronary physiology, ventricular mechanics, or myocardial substrate metabolism desirable. Send curriculum vitae, statement of research interests, and three references to: Gregory Schwartz, M.D., Ph.D., University of California, San Francisco, Cardiology 111C, VA Medical Center, 4150 Clement Street, San Francisco, CA 94121. Equal Opportunity Employer. The National Institute on Drug Abuse, a component of the NIH, supports over 300 predoctoral and postdoctoral researchers through individual fellowships and at the 36 training sites highlighted below. For information on these training sites, please contact the program directors. For information on individual awards or general information on NIDA research training programs, contact NIDA at 301/443-6071. Women, the disabled, and members of ethnic groups underrepresented in the health sciences, are especially encouraged to apply.

PREDOCTORAL ONLY

Neuropeptides Martin Adler, Ph.D. Temple U. Medicine (215) 221-3242 (215) 221-1904 (fax)

Behavioral Pharmacology, Neuroimmunology, Neurobiology Linda Dykstra, Ph.D. U. North Carolina (919) 962-6595 (919) 962-2537 (fax)

Pharmacology Barry Wolfe, Ph.D. Georgetown U. Medicine (202) 687-1420 (202) 687-6437 (fax)

POSTDOCTORAL ONLY

Human Behavioral Pharmacology George Bigelow, Ph.D. Johns Hopkins U. (410) 550-0035 (410) 550-0300 (fax)

Substance Abuse, AIDS & Sexually Transmitted Diseases (SAS) Prevention Brian Flay, D.Phil. U. of Illinois-Chicago (312) 996-7222 (312) 996-2703 fax)

Pharmacology: Molecular, Cellular, Behavioral Joseph Goldfarb, Ph.D. Mount Sinai School of Medicine (212) 241-7014 (212) 831-0114 (fax)

Behavioral Pharmacology, Treatment, Animal Behavioral Neuroscience John Grabowski, Ph.D. U. of Texas HSC (713) 792-7925 (713) 794-1425 (fax)

Treatment Research Sharon Hall, Ph.D. U. of California, S.F. (415) 750-2183 (415) 476-7734 (fax)

Biomedical Andrew Heath, Ph.D. Washington U. (314) 362-9400 (314) 362-9420 (fax) *Etiology & Treatment* Herbert Kleber, M.D. Columbia U. (212) 960-5570 (212) 795-8860 (fax)

Molecular/Behavioral Pharmacology Jack Mendelson, M.D. McLean Hospital (617) 855-2716 (617) 855-2519 (fax)

Maternal Substance Abuse, Molecular Neuropsychopharmacology, Pharmacotherapeutics, Dual Diagnosis Carrie Randall, Ph.D. Medical U. of South Carolina (803) 577-5011 Ext 7249 (803) 577-9092 (fax)

Pharmacologic/Psychosocial Treatments Richard Schottenfeld, M.D. Yale U. (203) 789-7282 (203) 789-7349 (fax)

Molecular Biology & AIDS Eric Simon, Ph.D. New York U. Medicine (212) 263-5637 (212) 263-5591 (fax)

Opioid Neurobiology & Molecular Genetics Stanley Watson, Ph.D., M.D. U. of Michigan (313) 763-3725 (313) 747-4130 (fax)

PREDOCTORAL & POSTDOCTORAL

Epidemiology, Etiology, Treatment & HIV/AIDS Douglas Anglin, Ph.D. UCLA (310) 825-9057 (310) 825-4779 (fax)

Epidemiology James Anthony, Ph.D. The Johns Hopkins U. (410) 995-3910 (410) 995-9088 (fax) anthony@jhuhyg.sph.jhu.edu

Behavioral Pharmacology Warren Bickel, Ph.D. U. of Vermont (802) 660-3060 (802) 562-3003 (fax) Pharmacology & Neuroscience Jean Bidlack, Ph.D. U. of Rochester (716) 275-5600 (716) 244-9283 (fax)

Molecular Pharmacology Charles Chavkin, Ph.D. U. of Washington (206) 543-4266 (206) 685-3822 (fax)

Neuroscience Steven Childers, Ph.D. Bowman Gray Medicine (919) 716-3791 (919) 716-7738 (fax)

Pharmacogenetics, Behavioral Pharmacology, Neurophysiology, Neuropharmacology, Molecular Biology John Crabbe, Ph.D. Oregon Health Sciences U. (503) 273-5298 (503) 273-5351 (fax)

Epidemiology & HIV/AIDS Roger Detels, M.D. UCLA (310) 206-2837 (310) 206-6039 (fax)

Pharmacology William Dewey, Ph.D. Medical College of Virginia (804) 786-0732 (804) 786-1664 (fax)

Neuroscience Robert Elde, Ph.D. and Virginia S. Seybold, Ph.D. U. of Minnesota (612) 624-9406 (612) 624-8118 (Fax)

Immune Response, AIDS, Brain & Immunity, Infectious Diseases Herman Friedman, Ph.D. U. of South Florida (813) 974-3281 (813) 974-4151 (fax)

Molecular/Cellular Approaches Steven Hyman, M.D. Harvard Medical School (617) 726-5715 (617) 724-9610 (fax)

Pharmacology & Neuroscience Charles Inturrisi, Ph.D. Cornell U. Medical (212) 746-6235 (212) 746-8835 (fax) **Behavioral Sciences** Bruce Johnson, Ph.D. MHRA of NYC/NDRI (212) 966-8700 (212) 334-8058 (fax)

Genetics Gerald McClearn, Ph.D. Pennsylvania State U. (814) 865-1428 (814) 865-3282 (fax)

Nursing, Populations at Risk, Prevention, Early Detection Shirley Murphy, Ph.D. U. of Washington (206) 543-8569 (206) 685-9551 (fax)

Molecular Biology, Neuropharmacology Eric Nestler, M.D., Ph.D. Yale U. Medicine (203) 789-7151 (203) 562-7079 (fax)

Treatment, HIV Charles O'Brien, M.D., Ph.D. U. of Pennsylvania (215) 222-3200 Ext 132 (215) 386-6770 (fax)

Neuropsychopharmacology Lewis Seiden, Ph.D. U. of Chicago (312) 702-9640 (312) 702-3003 (fax)

Psychoneuroimmunology Burt Sharp, M.D. Minneapolis Medical Research Foundation (612) 337-7381 (612) 347-3915 (fax)

Neurobehavioral Pharmacology Sheldon Sparber, Ph.D. U. of Minnesota (612) 625-5657 (612) 625-8408 (fax)







Boehringer Ingelheim Pharmaceuticals, Inc., a dynamic and growing force in the pharmaceutical industry, seeks a Staff Scientist to participate in research projects in its x-ray crystallography laboratory. For the success-oriented team player, this position offers a research-intensive environment with RAXISN imaging plate detector on a Rigaku RU200 and excellent computing support (EVS, VAXstation 4000-90 and several SGI indigo workstations).

The preferred candidate will offer a B.S. or M.S. in Biochemistry or related field with strong experience in the isolation, purification and crystallization of proteins. Experience with the protein crystallographic technique is desirable.

Boehringer Ingelheim is located on a campus-like setting in a beautiful area of Western Connecticut. Boehringer offers a competitive salary and benefits package including relocation assistance for qualified candidates. To apply, send resume and salary history to: Dept. JC-1S, Boehringer Ingelheim Pharmaceuticals, Inc.,



900 Ridgebury Road, Ridgefield, CT 06877-0368. Boehringer An equal opportunity employer m/f/d/v. As a progressive health care company, we have a nonsmoking environment.

POSTDOCTORAL

POSITION IN

IMMUNOLOGY

THE GLENN FOUNDATION FOR MEDICAL RESEARCH Announces The winner of the 1993 Glenn **Foundation Award** EARL R. STADTMAN, PhD National Heart, Lung and Blood Institute, NIH, Bethesda, MD

Ingelheim

Dr. Earl Stadtman, one of the pioneers in providing a framework for identification and quantification of cellular damage that can lead quantinication of certifiar darinage that can fead to premature aging, was the recipient of the 1993 Glenn Foundation Award for significant research in the biology of aging. Dr. Stadtman was honored for his research in defining specific molecular mechanisms that implicate dis-crete biochemical changes in the loss of physiological function.

The \$20,000 award was presented to Dr. Stadtman at The Gerontological Society of America's 46th Annual Scientific Meeting in November of 1993.

The award is funded by the Glenn Foundation for Medical Research in Santa Barbara, California and administered by The Gerontological Society of America. The Society is the national multidisciplinary organization for researchers, educators and practitioners in aging.

The deadline for the 1994 Glenn Award selection process is May 8. For further information, contact: Awards Coordinator, The Gerontolog-ical Society of America, 1275 K Street, NW, Suite 350, Washington, DC 20005–4006: (202) 842-1275.



ACTIVATED CELL THERAPY, INC.

Employment Opportunity Profile

Activated Cell Therapy, Inc. develops and commercializes living cell therapy services and related products for the treatment of cancer, autoimmune disease and chronic viral infection. Near-term, the company's proprietary technologies will expand markets for restoring immune system function following high-dose chemotherapy or radiation therapy. Activated Cell Therapy will also use its technolgies to create new markets for living cell therapies that treat disease by modulating or modifying the immune response

Scientist

We currently have an opening for a Scientist in our Cellular Immunology Department. The candidate will be instrumental in the development of adoptive immunotherapies for cancer and viral infections. Responsibilities will include working in an interdisciplinary team to study the unique role of dendritic cells in T cell activation using human immune cells.

The candidate should possess a Ph.D. in Immunology. Prior experience with human immune cells is a plus.

We are a growing company that offers an excellent compensation and benefits package, along with the opportunity to make a significant impact in the industry. For consideration, please send your resume with a cover letter to: Activated Cell Therapy, Inc. 291 North Bernardo Avenue, Mountain View, California, 94043. Attn: Human Resources

We are an equal employment opportunity/ affirmative action employer.

ECOGEN EUROPE s.a.

Perugia, Italy

Applications are invited for a Formulations Research Scientist at Ecogen Europe S.r.l. Successful candidates will participate in formulation research and development for biorational products including, insecticidal nematodes, Bacillus thuringiensis (Bt) bioinsecticides, and fungal products for control of plant diseases.

Candidates for this position should have a Ph.D. or M.S. degree in an appropriate field such as chemistry or biology, and/or demonstrated expertise in agricultural formulation. Experience with development of biological (biorational) pesticides is highly desirable.

Ecogen Europe S.r.l. is a partially owned subsidiary of Ecogen Inc., an internationally recognized leader in agricultural biotechnology. Ecogen Europe is located in a state-ofthe-art research facility in the beautiful Umbria region of Italy near Perugia, an area rich in cultural and recreational diversity.

We offer a competitive compensation and benefits package and a professional environment. Applicants from EEC member countries are particularly encouraged. For immediate consideration, please submit a comprehensive resume and the names, addresses, and phone numbers of three references to:

Human Resources Department #94-16, Ecogen Inc., 2005 Cabot Blvd. West, Langhorne, Pennsylvania 19047-1810. An EOE employer.

DIRECTOR ANIMAL MODELS CORE INSTITUTE FOR HUMAN GENE THERAPY



The Institute for Human Gene Therapy (IHGT) is a pioneer in the practical application of gene therapy technologies to clinical disease. IHGT is dedicated to performing basic, applied and clinical research in the treatment of diseases at the molecular and cellular levels.

This position is in the University of Pennsylvania School of Medicine with adjunct faculty appointments in the University of Pennsylvania School of Medicine and the School of Veterinary Medicine. A veterinary degree is required. Preference may be given to applicants with a Ph.D. in anatomic pathology, clinical pathology or toxicology and/or board certification in one of these disciplines. Previous experience in managing a multi-disciplinary research organization conducting studies under FDA Good Laboratory Practices (GLP) regulations is strongly preferred. The individual must have an outstanding research record in pathology, toxicology or a related field. The ideal candidate will have experience in the evaluation of viral pathology in tissues of various species, will have served as a study director on successful IND applications, and will have lab experience commensurate with these goals.

This individual will provide analysis of tissues for pre-clinical toxicology studies prior to the use of recombinant viruses in human trials, and will interact directly with investigators of the Institute for Human Gene Therapy. A primary goal will be submission of reports containing pre-clinical data to allow the investigation of new drug applications to be successfully submitted. The person will be responsible for the development of the Animal Models Core component of new grant submissions and will provide administrative leadership to this Core. Please send current C.V. and letter of interest to: Steven Raper, M.D., Chairman, AMC Search Committee, c/o Institute for Human Gene Therapy, 3400 Spruce Street (601 Maloney), Philadelphia, PA 19104-4283.

An Equal Opportunity/Affirmative Action Employer. We encourage minority and women candidates.

MOLECULAR ONCOLOGY RESEARCH SCIENTIST

The Cancer & Infectious Diseases Unit, Upjohn Laboratories Discovery Research, has an opportunity available for a Molecular Oncologist. Responsibilities include:

- Conceiving, planning and implementing research strategies leading to the discovery of novel treatments for human cancers.
- Providing leadership to our cancer research program in the areas of molecular oncology and molecular biology.
- Establishing an independent research laboratory, and collaborating with existing scientific staff.
- Investigating the significant molecular mechanisms of human cancer with creativity, excellence and timeliness.

We seek an individual with a Ph.D., M.D., or M.D./Ph.D. in Molecular Biology, Biochemistry, or related discipline with a minimum of two years of postdoctoral experience and a broad based understanding of cancer biology. The successful candidate must have a strong record of research achievement and publications in the molecular biology of cancer. The candidate must also have a self-sufficient personality and a desire to participate enthusiastically in the translation of contemporary scientific concepts into pharmacologic therapies for clinical development.

In addition to an excellent salary and benefits package, Upjohn Laboratories offers a stimulating, multi-disciplinary research environment at our modern facilities located in Kalamazoo, a southwestern Michigan community located midway between Chicago and Detroit. Our region provides an outstanding mix of cultural and recreational pursuits and a reasonable housing cost market.

For consideration please forward your C.V., referring to posting #203, to: **The Upjohn Company, Corporate Recruiting, 7000 Portage Road, Kalamazoo, MI 49001.** Equal Opportunity Employer, M/F/D/V.



MOLECULAR BIOLOGY & IMMUNOLOGY

The Department of Medial Microbiology and Immunology and the H. Lee Moffitt Cancer Center & Research Institute at the University of South Florida College of Medicine are seeking applications for an Assistant and Associate Professor level individuals to participate in the Immunology Program under a stimulating academic environment that includes excellent laboratory and clinical facilities.

The individuals sought should hold a Ph.D. with extensive postdoctoral training. Candidates must have demonstrated productivity and experience in modern molecular research related to tumor immunology. The successful candidates will be expected to establish a vigorous independent research program in molecular immunology and successfully compete for extramural funding. The position for Associate Professor will be required to have established funding. These positions will be tenure earning.

Send current curriculum vitae and a brief statement of major academic interests to Julie Y. Djeu, Ph.D., Immunology Program, Office of Faculty Recruitment, Moffitt Cancer Center, 12902 Magnolia Drive, Tampa, Florida 33612. Applicants who need a reasonable accommodation in order to participate in the selection process must notify Brenda Crebs in the Office of Faculty Recruitment, (813) 975-7885, forty-eight hours in advance. Applications must be postmarked by deadline of May 5, 1994.

The H. Lee Moffitt Cancer Center & Research Institute, adjacent to the Health Sciences Center on the University of South Florida campus in Tampa, includes a 162bed inpatient and ambulatory cancer facility for children and adults, a 20-bed bone marrow transplantation program, a recently established high volume screening program including a fixed site and a mobile unit and a new research facility.



Moffitt Cancer Center is an Equal Opportunity Employer. The University of South Florida is an EQ/Equal Access/Affirmative Action Employer.

WASHINGTON · UNIVERSITY · IN · ST · LOUIS Biology & Biomedical Sciences

Graduate and postdoctoral training

opportunities in...

Cell-Cell Interactions

Eric Beyer - Cell and molecular biology of gap junctionmediated intercellular communication.

Eric Brown - Leukocyte signal transduction. Edmond Crouch - Extracellular matrix and pulmonary

surfactant proteins. Douglas Dean - Control of cell-cell interactions during

development; regulation of the cell cycle. William Frazier - Structure and function of cell matrix

- molecules that regulate cell phenotype. Ursula Goodenough - Signal transduction and control
- of gene expression in *Chlamydomonas*. Robert Mecham - Cell-matrix interactions and extra-
- cellular matrix assembly. William Parks - Mechanisms regulating the expression
- of connective tissue proteins and proteolytic enzymes. Joshua Sanes - Molecular and cellular analyses of
- selective synapse formation and neuronal cell lineage.
- Sam Santoro Structure, function and regulation of adhesive protein receptors.
- Thomas Steinberg Roles of membrane receptors and transporters in intercellular communication in macrophages.

Steven Teitelbaum - Osteoclast differentiation and biology.

...and others

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

POSITIONS OPEN

POSTDOCTORAL POSITION available to study molecular aspects of pathogenesis of infection caused by *Staphylococcus aureus*. Approaches currently include use of glycopeptide resistant mutants to study virulence determinants in an animal model, study of the molecular mechanisms of glycopeptide resistance in staphylococci and evaluation of the role of iron metabolism in experimental staphylococcal infections. Please send curriculum vitae and names of three references to: **Robert Daum**, **M.D.**, **Professor of Pediatrics**, **University of Chicago**, **5841 South Maryland Avenue**, **MC6054**, **Chicago**, **IL 60637**.

HUMAN LINKAGE MAPPING

Two **POSTDOCTORAL POSITIONS** open June 1, 1994, or soon thereafter to participate in NIH-funded studies on human linkage mapping in the laboratory of **Dr. James Weber**. This laboratory is a component of one of the official NIH Genome Centers. Gene mapping efforts will be focused on asthma and epilepsy. Improvements in gene mapping tools and technology, especially automation, will be emphasized. Competitive salary and benefits. Send curriculum vitae and three reference letters by May 15, 1994, to: Human Resources, Employment Generalist, Marshfield Clinic, 1000 North Oak Avenue, Marshfield, WI 54449. The Marshfield Clinic is an Equal Opportunity Employer, M/F/H/V.

MOLECULAR PARASITOLOGY

POSTDOCTORAL POSITION available immediately to study cyclooxygenase genes and enzymes in filarial parasites and other nematodes. Molecular biology expertise required; experience in eukaryotic expression, protein chemistry, and parasite or *C. elegans* biology preferred. Send or FAX curriculum vitae and names of three references to: Dr. Leo Liu, Beth Israel Hospital, 330 Brookline Avenue, Boston, MA 02215; FAX: 617-277-6061. Women and minorities are encouraged to apply.

POSTDOCTORAL POSITION available immediately in a collaborative project in the laboratories of **R**. **R**. Freedman (Psychiatry), J. L. Ram (Physiology), and J. **R**. Sowers (Endocrinology & Hypertension) to study cellular and hormonal mechanisms mediating gender differences in cardiovascular function. Research utilizes isolated vascular preparations, cell culture, patch clamping, and mRNA measurements. Candidates experienced in several of these techniques are encouraged to apply. Send curriculum vitae and three letters to: Dr. J. L. Ram, Department of Physiology, Wayne State University, is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSISION CHEMICAL AND PHYSICAL SCIENCES

This position in Medicinal Chemistry is a challenging opportunity to contribute to drug discovery as part of a multidisciplinary team focused in the area of immunosuppression and inflammation. To qualify, you must have a strong background in synthetic organic chemistry and be interested in the design and synthesis of enzyme inhibitors. Send curriculum vitae, statement of research interests and names of three references, to: Mary Jeannette, The DuPont Merck Pharmaceutical Company, Postdoctoral Program, Position #94-WJP, P.O. Box 80400, Wilmington, DE 19880–0400.

VISION RESEARCH

POSTDOCTORAL POSITIONS available for cloning, expression and reconstitution of photoreceptor genes coding for phospholipase C. Write: Dave McConnell, Department of Biochemistry, Michigan State University, East Lansing, MI 48824. MSU is an Affirmative Action/Equal Opportunity Institution.

POSTDOCTORAL POSITION. Available immediately to study oxygen sensing and oxygen control of transcription in yeast. This research involves recombinant DNA techniques, genetics, and fermentation. Candidates should have a Ph.D. in biochemistry or molecular biology and interest in the development of methods for maintaining and growing cells to steady state at very low oxygen levels. Send curriculum vitae and references to: **R. O. Poyton, MCD Biology, University of Colorado, Boulder, CO 80309–0347**. Application deadline is April 4, 1994.

POSITIONS OPEN

POSTDOCTORAL POSITION. Available immediately in the Department of Neuroscience, University of California, Riverside. We are seeking an electron microscopist, preferably with expertise in immunocytochemistry, to join us in an ongoing research program that includes morphologists and electrophysiologists investigating neuronal and glial plasticity and neural control of peptidergic neurons in the adult mammalian CNS. Salary will be commensurate with qualifications and experience. Excellent benefits package. Send curriculum vitae, representative reprints, statement of research interests and names, addresses and FAX numbers of three references to: Glenn I. Hatton, Chairman, Department of Neuroscience, University of California, Riverside, CA 92521–0146.

POSTDOCTORAL POSITION: Position available to join a multidisciplinary program using molecular biological and pharmacological approaches to study signal-transduction mechanisms regulating exocrine secretion by salivary gland cells.

Send curriculum vitae and three letters of recommendation to: David J. Culp, Ph.D., University of Rochester, School of Medicine and Dentistry, Box 611, Rochester, NY 14642.

The University of Rochester is an Equal Opportunity/ Affirmative Action Employer. Due to funding requirements, applicants limited to U.S. citizens/permanent residents.

POSTDOCTORAL POSITIONS IN GLYCOBI-OLOGY: Join a multidisciplinary group investigating mucin-glycoprotein biosynthesis. One position involves *in vivo* analysis of polypeptide GalNAc transferase substrate-specificity and requires strong skills in molecular biology and/or glycoprotein characterization. The second position involves the role played by O-glycans in development and requires demonstrated expertise with *C. elegans* molecular biology. Send curriculum vitae and the names of two references to: Dr. Lawrence Tabak, University of Rochester, School of Medicine and Dentistry, Box 611, Rochester, NY 14642; FAX: 716-473-2679.

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

POSTDOCTORAL POSITIONS IN BIOCHEMISTRY AND MOLECULAR BIOLOGY

Positions are available immediately to study the mechanism of action of specific deoxynucleotide-metabolizing enzymes as well as the regulation of their genetic expression in eukaryotes and prokaryotes. Gene isolation and amplification of their protein products will be required. Once obtained, substrate and regulatory sites on the protein products will be determined by functional groupspecific reagents and affinity labels. In addition, sitespecific mutagenesis will be employed to establish the relation of structure to function in these enzymes. Cloning and sequencing experience desirable. The research will be conducted in a well-equipped core facility. Compensation from Health Research Inc. dependent upon experience. Send résumé and three references to: Dr. Frank Maley, Wadsworth Center for Laboratories and Research, Empire State Plaza, Box 509, Albany, NY 12201. An Equal Opportunity//Affirmative Action Employer.

POSTDOCTORAL POSITION is available for Ph.D. or M.D. to study neuronal signaling via the stress response (heat shock and ultraviolet light) as it relates to reactivation of latent herpes simplex virus and regulation of viral gene expression. Experience in molecular biology, virology and/or biochemistry preferred. Send curriculum vitae and 3 letters of reference to: Dr. Craig S. Miller, MN118 Chandler Medical Center, University of Kentucky, Lexington, KY 40536–0084. An Equal Opportunity Employer.

POSTDOCTORAL POSITION (available July 1, 1994) to study aspects of the cell biology of ovarian failure (Polycystic ovary) in a rat model. Experience in cell biology, biochemistry, endocrinology, molecular biology, and animal models desired. Send curriculum vitae, names and addresses of three references to: Dr. Everett Anderson, Department of Cell Biology, Harvard Medical School, 25 Shattuck Street, Boston, MA 02115. An Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately to study the role of POU/homeodomain genes in the development of the embryonic mouse CNS. Relevant techniques include *in situ* hybridization, transgenic mice and embryonic stem cell technology. Experience in molecular biology required. Please send cover letter, curriculum vitae and the addresses and telephone numbers of three references to: E. Bryan Crenshaw, Ph.D., Departments of Medicine and of Molecular Genetics and Cell Biology, Committees on Developmental Biology, Genetics and Neurobiology, MC1027, 5841 South Maryland Avenue, The University of Chicago, Chicago, IL 60637. Call: (312) 702-2110; FAX: (312) 702-9194.

POSTDOCTORAL POSITION—RHONE-POU-LENC RORER, a global leader in pharmaceutical research, has a postdoctoral position immediately available to develop innovative *in vitro* techniques for discovery drug metabolism studies. Candidate will participate in and expand from current emphasis on human hepatic cytochrome P450 characterization to CNS, pulmonary, and GI metabolism. Enzyme assay and chromatography experience required. Cell culture/protein biochemistry experience preferred. RHONE-POULENC RORER offers a highly competitive salary, a challenging professional work environment and opportunities for continued growth. For immediate consideration, forward your résumé with salary history to: Human Resources—Mail Stop H15, RHONE-POULENC RORER, 500 Arcola Road, Collegeville, PA 19426. We are an Equal Opportunity Employer, M/F/D/V.

POSTDOCTORAL POSITIONS available immediately for studies of cell regulation by Ras-related GTPbinding proteins. Possible projects involve NADPH oxidase regulation, mechanisms of cytoskeletal regulation by Rac/Rho, lipid/protein kinase regulation by Rac/Rho, and extensions of these studies into cells of the immune system. I am looking for motivated and dedicated individuals with strong backgrounds in molecular/cellular biology and/or biochemistry. Experience with microinjection is sought. Contact: Gary M. Bokoch, Ph.D., IMM-14, The Scripps Research Institute, 10666 North Torrey Pines Road, La Jolla, CA 92037. Telephone: (619) 554-8217, FAX: (619) 554-8218. An Equal Opportunity Employer.

POSTDOCTORAL FELLOW ATHEROSCLEROSIS RESEARCH

Position available for study of the role of cholesterol metabolism in experimental primate atherosclerosis, with emphasis on the role of hepatic enzymes responsible for regulation of whole body cholesterol homeostasis. Familiarity with molecular biology and biochemistry desirable. First year fellowships start at \$20,000 with appropriate adjustments for experience level. Dr. Lawrence Rudel, Department of Comparative Medicine, Bowman Gray School of Medicine of Wake Forest University, Winston-Salem, NC 27157. Affirmative Action/Equal Opportunity Employer.

THREE-YEAR POSTDOCTORAL FELLOWSHIP AT THE SMITHSONIAN TROPICAL RESEARCH INSTITUTE

The Smithsonian Tropical Research Institute (STRI), a bureau of the Smithsonian Institution in the Republic of Panama, invites applications for a 3-year postdoctoral fellowship for research based at one of the Institute's facilities. Disciplines may include ecology, anthropology, paleontology, evolution, behavior and physiology of tropical plants or animals. Proposals that include comparative research in other tropical countries will be considered.

Applications should include a research proposal (less than 10 pages), curriculum vitae, two letters of reference, names and telephone numbers of three additional references and reprints of most important papers. Annual beginning stipend is \$28,000 with yearly travel and research allotments. Send application by June 1, 1994, to: Tropical Research Fellow, Smithsonian Tropical Research Institute, Unit 0948, APO AA 34002–0948.

Awards are based upon merif, without regard to race, color, religion, sex, national origin, age or condition of handicap of the applicant.
CytRx Corporation is a research based pharmaceutical company pioneering the dewélopment of critical care therapeutics based on agents which alter sufface characteristics of cells and molecules. Our diversified product pipeline includes potential treatments for carcer, vascular & infectious diseases, and burns.

Our unique niche has resulted in our rapid growth and impressive success. Well-capitalized and poised for growth into new areas of biopharmaceuticals, we are seeking to add to our talented scientific staff. Our goal, by mid-year, is to have 80% of our personnel dedicated to R&D.

Our scientists and technical professionals enjoy a highly competitive salary, excellent benefits, stock options and a dynamic environment that fosters achievement. Our brand new 20,000 square foot research facility is located in a beautiful suburban location with a low cost of living, excelient school system and an exceptional quality of life just outside the cosmopolitan city of Atlanta, home of the 1996 Olympics.

For conlidential consideration please mail of fax your resume/ C.V., to: CytRx Corporation, 154 Technology Parkway, Norcross, GA 30092, Fax: (404) 448-3357. An Equal Opportunity Employer.

Pharmaceutical

INNOVATIVE TECHNOLOGY

DIRECTOR, PRECLINICAL DEVELOPMENT

This position oversees a team of 3-5 scientists responsible for all preclinical safety/disposition and toxicology studies. A PhD in Pharmacology or Toxicology plus 7-10 years' experience reflecting knowledge of FDA regulations, GLPS, and matrix management systems.

ASSISTANT DIRECTOR, POLYMER CHEMISTRY

You'll guide a diversely experienced team of scientists in polymer research, including polymer synthesis, characterization and method development. A PhD in Polymer, Organic, or Synthetic Chemistry with 5-7 years' experience are needed. Knowledge of cGMP document preparation and radio-labeled chemicals.

SENIOR SCIENTIST TOXICOLOGIST

Major duties include designing/implementing GLP toxicology/safety studies for INDs. You must have 3-5 years' related experience and a PhD in Toxicology, Pharmacology, or related scientific discipline.

SENIOR SCIENTIST, CELL BIOLOGY

Initiate studies to understand the mechanism of action of compounds using human cell systems. Perform metabolism studies necessary for preclinical evaluations of active compounds. A PhD in Cell Biology or Pharmacology with 2-5 years' hands-on-experience with tissue culture techniques, cell lines, macrophage functions, and assavs.



IMMUNOLOGIST Cincinnati, OH

Marion Merrell Dow Research Institute is seeking an individual to participate in a program examining the regulation of T cell activation in autoimmune diseases. A Bachelor's or Master's in Immunology and expertise in tissue culture, enzyme immunoassays, western and northern blotting, kinase assays, and *in vivo* models of autoimmunity are essential. Prior experience in molecular biology is preferred.

Marion Merrell Dow Research Institute is committed to many areas of drug research including immunology, respiratory, oncology, metabolic, ion channel and transporter research, and cerebrovascular and acute neurological disorders. We offer excellent compensation including 401(k) and stock options. You will also find an affordable yet cosmopolitan lifestyle in Cincinnati. For consideration, send resume with 2-3 references and salary history to: Marion Merrell Dow Inc., Human Resources Department/ Research Staffing, 2110 East Galbraith Road, Cincinnati, OH 45215 (Please indicate Job Code: IMMUN).

MARION MERRELL DOW INC.

LABORATORY



Regeneron Pharmaceuticals, Inc. is committed to the discovery and development of therapeutic pharmaceuticals for degenerative and traumatic nerve disorders. Immediate opportunity now exists within our Discovery group for an experienced scientist.

You will work as part of a team focused on the identification/characterization of novel neuronal survival/growth factors. A recent Ph.D. or a B.S./M.S. in a scientific discipline is required, together with at least 3 years' relevant experience. Strong knowledge of protein chemistry, experience in receptor/ligand interactions, microbore HPLC, protein sequencing, mass spectrometry, protein expression, electrophoresis and tissue culture are essential.

Regeneron is situated on an expansive wooded campus near Tarrytown, in Westchester County, 25 miles north of New York City. To find out more about our supportive team setting and the impact you can make, please send detailed resume with salary history to: Human Resources, Dept., Bin GC, Regeneron Pharmaceuticals, Inc., 777 Old Saw Mill River Road, Tarrytown, N.Y. 10591-6707. Equal Opportunity Employer.



American Association for the Advancement of Science

1994 Mentor Awards Call for Nominations

Lifetime Mentor Award (10 or more years)

Mentor Award (less than 10 years)

The American Association for the Advancement of Science (AAAS) invites nominations for the 1994 Mentor Awards. The two categories are *Lifetime Mentor Award* and *Mentor Award*. These annual awards honor individuals who, during their careers demonstrate extraordinary leadership to increase the participation of women of all racial/ethnic groups; African American, American Indian, and Hispanic men; and/or people with disabilities in science and engineering fields and careers.

A prize of \$5,000 and a commemorative plaque for the *Lifetime Mentor Award* will recognize any individual who has mentored and guided significant numbers of students from these underrepresented groups to the completion of doctoral studies and/or who has impacted the climate of a department, college, or institution to significantly increase the diversity of students pursuing and completing doctoral studies. This individual will have served in such a role for 10 years or longer.

The *Mentor Award*, a prize of \$2,500 and a commemorative plaque, will recognize an individual who has mentored a significant number of students over a period of less than 10 years.

- Such commitment and extraordinary effort may be demonstrated by:
- the number and diversity of students mentored.
- assisting students to present and publish their work, to find financial aid, and to provide career guidance.
 providing psychological support, encouragement, and essential strategies for life
- in the scholarly community.
 continued interest in the individual's professional advancement.

The AAAS Mentor Awards are administered by the Committee on Opportunitics in Science (COOS).

Deadline for the 1994 Mentor Awards nominations is 1 August 1994.

The 1994 Awards will be presented during the Association's Annual Meeting in Atlanta, Georgia in February 1995.

For additional information concerning the awards, please contact Paula Lee or Yolanda George at (202) 326-6670.

PATHOLOGISTS/DIAGNOSTIC BIOLOGISTS DEPARTMENT OF PATHOLOGY

Columbia University/Presbyterian Hospital in the City of New York

Sr. Hematopathologist: Appointment at Associate Professor/ Professor level. Must have extensive experience in all aspects of hematopathology and training in molecular diagnostics. AP boards and eligibility for NYS license.

Jr. Hematopathologist(s): Requires both clinical and laboratory training and independent research potential. BC/BE in AP. Unique opportunity to develop research programs in oncogenesis in association with outstanding molecular oncology group.

Anatomic Pathologist(s): Assistant Professor positions require strong diagnostic skills, evidence of research ability. Must be BC/BE in AP.

Cytogeneticist: M.D. or Ph.D. with NYS laboratory director's license and expertise in turnor cytogenetics. Must have strong research/ publication background. Appointment at senior level possible.

Molecular Diagnostics: M.D. or Ph.D. for service-oriented position in application of molecular methods to diagnostics. Must be capable of organizing a high-volume laboratory. Responsible for QA/QC and regulatory affairs.

Applications together with the names of three references should be sent to: Search Committee c/o Jean Douglas-Betancourt, Department of Pathology, P&S 15-402, College of Physicians and Surgeons, 630 West 168th Street, New York, NY 10032

Columbia University is an affirmative action/equal opportunity employer. Applications from women and members of minority groups are actively encouraged.

CHAIRPERSON DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY

The University of Texas Medical Branch (UTMB) at Galveston invites applications and nominations for the position of Chair of the Department of Microbiology and Immunology. UTMB seeks a distinguished M.D. and/or Ph.D. scientist with an outstanding record of significant scientific productivity, a commitment to excellence in teaching both graduate and medical students, and an ability to attract external funding. The candidate should also have the capability to offer scientific leadership to a department covering the broad disciplines of microbiology and immunology and the commitment to lead the department to national prominence and academic excellence. The department occupies space in a new research building.

The Department currently includes 28 fulltime faculty members. The new Chair will have the opportunity to recruit additional faculty members. The Department is responsible for teaching UTMB medical students and has an active Ph.D. graduate program.

Interested applicants should send a detailed curriculum vitae, an outline of current and future research interests, and names of three references to: David H. Walker, M.D., Chair, Microbiology Search Committee, Department of Pathology, The University of Texas Medical Branch, 301 University Blvd., Galveston, TX 77555-0609. UTMB is an equal opportunity affirmative action employer *M/F/D/V*. UTMB is a smoke-free/drug-free work place. UTMB hires only individuals authorized to work in the U.S.

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City of Hope is a world renowned medical and research facility that is confronting the challenges of cancer and other major diseases through breakthrough research programs and innovative treatment. More than 100 clinical and laboratorybased research programs are helping to discover new methods of diagnosis and treatment.

If you have a Master's, Bachelor's or Post Ph.D. degree plus the desire to make an important contribution to the health of millions, we invite you to enter our City of Discovery. Opportunities are available for Research Associates in areas like:

MOLECULAR BIOCHEMISTRY ANATOMIC PATHOLOGY ONCOLOGY IMMUNOLOGY

For more information on our latest discoveries, and how you can be one of them, please contact Human Resources, City of Hope, 1500 E. Duarte Road, Duarte, CA 91010. Jobline (818) 301-8200. Resumes are accepted on a continuous basis. We are an Equal Opportunity Employer.



Forging New Frontiers...

Cardiovascular Pharmacologist Antiarrhythmia Research

The Cardiovascular Diseases Research Department in St. Louis, Missouri is seeking a scientist with a Ph.D. in Pharmacology/Physiology or a related discipline and 2-3 years of postdoctoral experience in antiarrhythmia research. The focus of this position is to conduct biomedical studies aimed at discovering novel antiarrhythmic agents. Responsibilities include planning and performing in vivo experiments to characterize the electrophysiological effects of novel antiarrhythmic agents on the heart and to determine the efficacy of these agents in animal models of supraventricular and ventricular arrhythmias. Experience in assessing the mechanism of action of antiarrhythmic agents using the in vitro techniques of action potential recording or patch clamp methods is also desired.

For consideration, please send your resume to: **SEARLE COMPANY, BB5B-EM**; **700 Chesterfield Village Pkwy; St. Louis, MO 63198.** Equal Opportunity Employer M/F/D/V.

SEARLE On track to being on top.

BIOLOGY TRAINING COURSE IN ANTARCTICA (2nd YEAR) "Biological Adaptations of Antarctic Marine Organisms"

This National Science Foundation sponsored course will be held at McMurdo Station (Antarctica) in the new science center (46,000 sq.ft.) from January 4, 1995 to February 4, 1995. The emphasis of the course will be on experimental antarctic biology with exposure to field collection operations. The specific themes for the 1995 course are: (i) Evolution of Structure-Function in Cold Adapted Proteins and Biology of Antifreeze Strategies in Antarctic Algae (Lynda Goff, Univ. of Illinois); (ii) Molecular Evolution and UV-photobiology of Antarctic Algae (Lynda Goff, Univ. of California, Santa Cruz, and Deneb Karentz, Univ. of San Francisco); (iii) Comparative Studies of Protein and Membrane Adaptations to Cold in Marine Invertebrates and Fish (George Somero, Oregon State University.); (iv) Physiology and Biochemistry of Larval Development of Antarctic Southern California).

This is an international course, open to all nationalities. Applications are invited from graduate students, postdoctoral fellows, and other research scientists who are interested in an introduction to antarctic biology, or from individuals who have worked in Antarctica before and wish to develop new approaches and techniques. The 1995 course will be limited to 16 students. Full scholarships are available to each student accepted into the course to cover the cost of travel from home institution to Antarctica and room and board while in Antarctica. Deadline for completed applications at Antarctic Support Associates is May 31, 1994. To obtain an application form write to: Director, Science Support, Atm. McMurdo Biology Course, Antarctic Support Associates, 61 Inverness Drive East, Suite 300, Englewood, Colorado 80112, USA (Phone 303-790-8606; FAX 303-790-9130).

Albert B. Alkek Institute of Biosciences & Technology Texas A&M University

Allen Chair and Director Center For Cellular And Molecular Nutrition

The Center For Cellular And Molecular Nutrition

will be housed in a new 11-story research tower located in the Texas Medical Center, Houston, and will join existing groups in genomic research, extracellular matrix biology, cancer biology, mammalian virology and bioinformatics which foster research linking cell and molecular sciences with medicine and agriculture.

The Center Director

will hold a tenured appointment in an academic department at Texas A&M University, College Station, TX. Applicants should have a record of accomplishments in cell, molecular and/or developmental



biology and have an interest in bridging research in these areas to animal and human nutrition. Applicants working in membrane biology, hormone/cytokine and receptor mechanisms, signal transduction, gene regulation or genetics are especially encouraged to apply. The position offers a special opportunity to define and develop frontiers in nutritional sciences while interacting with established groups in the Texas Medical Center and Texas A&M University.

Interested individuals should send a letter, curriculum vitae and names of persons who may be contacted as references to:

Dr. Wallace L. McKeehan, Chair, Search Committee, Dept. ACD-SM4194, Institute of Biosciences & Technology, Texas A&M University, 2121 W. Holcombe Blvd., Houston, TX 77030-3303. The Texas A&M University System is an affirmative action/equal opportunity employer.

Tenure-Track Faculty Positions

Center For Cancer Biology

The Center For Cancer Biology

is housed in a new 11-story research tower located in the Texas Medical Center, Houston, TX. together with groups in genomic research, extracellular matrix biology, mammalian virology and bioinformatics. The Institute fosters research in cell and molecular sciences bridging medicine and agriculture by interaction with programs in the Texas Medical Center and the Texas A&M system. The Center focuses on molecular signaling mechanisms from the extracellular environment to the nucleus.

Applications

will be considered for tenure-track positions at the Assistant or Associate Professor levels. Appointments will be in an academic department at Texas A&M University, College Station, TX. Applicants must have a Ph.D or M.D. degree, exhibit research contributions in cell, molecular and/or developmental biology and have potential to develop an independent research program related to cancer biology. One position will focus at the membrane level, another between membrane and nucleus and another at the nuclear gene regulation level. Applicants with programs in developmental biology and/or employing transgenic technologies are especially encouraged to apply.

Response

Interested individuals should send a letter and curriculum vitae, and have three letters of reference sent to: Dr. Wallace L. McKeehan, c/o W. R. Alley, Dept.CB-SM4194, Institute of Biosciences & Technology, Texas A&M University, 2121 W. Holcombe Blvd., Houston, TX 77030-3303. *The Texas A&M University System is an affirmative action/equal opportunity employer.*

POSITIONS OPEN

POSTDOCTORAL POSITIONS to study leukocyte motility in the nervous system. Available now or spring 1995. Please include brief but specific description spring 1995. Please include brief but specific description of relevant experience and basis for interest. Reply to: Dr. L. Lampson, Laboratory of CNS Immunology and Tumor Biology, Neurology–LMCR 116, Brigham and Women's Hospital, Boston, MA 02115. Please indicate fellowships for which you are eligible.

POSTDOCTORAL POSITION available to study POSTDOCTORAL POSITION available to study developmental genetics, regeneration and dedifferentia-tion using the planarian Dugesia tigrina as a model. Experience in molecular biology required, cell culture and 3 references to: Lawrence C. Shimmin, Genetics Center, University of Texas Health Science Center at Houston, P.O. Box 20334, Houston, TX 77225. (FAX: 713-792-4615) The University of Texas is an Equal Opportunity Employer and encourages the application of women and minorities. of women and minorities.

POSTDOCTORAL POSITION

Molecular Biologist/Biochemist to study the intracellular assembly of glycoinositol phospholipid (GPI) an-chor structures and defects in human disease; expression cloning of genes, transcriptional regulation, and chemical analyses of intermediates. Contact: M. Edward Medof, Institute of Pathology, GPI-anchor Group, Case Western Reserve University, 2085 Adelbert Road, Cleveland, OH 44106. An Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL FELLOWSHIP available immediately to clone, identify, and study the regulation of genes induced by ionizing radiation in mammalian cells. Applicants should hold a Ph.D. in molecular biology or biochemistry and have experience with expression clon-

Send curriculum vitae, statement of research interests and library screening. Send curriculum vitae, statement of research interests and three letters of reference to: Dr. Jean-Numa Lap-eyre, Department of Experimental Radiotherapy Box 66, University of Texas M.D. Anderson Cancer Cen-ter, Houston, TX 77030; FAX: (713) 794-5369.

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POSTDOCTORAL FELLOWSHIP— NEUROSCIENCE

The Neurosciences Unit at the Loeb Research Institute, Ottawa Civic Hospital and University of Ottawa, has an immediate opening for a cellular electrophysiolo-gist to study signal transduction in CNS neurons. Re-quires M.D. or Ph.D. degree, and experience with *in vitro* quires M.D. or Ph.D. degree, and experience with in vitro preparations, current and patch clamp recording tech-niques. The Neurosciences Program includes 8 PI's with expertise in molecular and cellular neurobiology applied to exocytosis, membrane trafficking, signal transduction, ion channel function, post-ischemic neuronal function and survival. The position is for an MRC-funded project focused on the neurophysiology and pharmacology of hypothalamic and forebrain neurons regulating pituitary secretion and cardiovascular homeostasis. Salary range \$28,650 to \$34,500. Send or FAX: (613-761-5360) curriculum vitae, a short statement of interests and names of 3 references to: Dr. Leo Renaud, Neurology Divi-sion, Ottawa Civic Hospital, 1053 Carling Avenue, Ottawa, Ontario, CANADA K1Y 4E9.

POSTDOCTORAL FELLOWSHIP

Neuroendocrinologist/Immunologist to study influence of neuroendocrine system on cell-mediated immune responses to infectious microorganisms. Fellow will join an active team of Immunologists and Cellular Biologists investigating host-parasite interactions with an emphasis on cellular immunity in well-established model systems.

on cellular immunity in well-established model systems. Position is immediately available and is funded through a national research training program. Applicants must have U.S. citizenship or permanent residency. Candi-date should send curriculum vitae and three letters of recommendation to: Dr. Thomas Jerrells, Department of Cellular Biology & Anatomy, Louisiana State University Medical Center, P.O. Box 33932, Shreve-port, LA 71130.

An Affirmative Action Employer.

POSITIONS OPEN

POSTDOCTORAL FELLOWSHIP APOPTOSIS-SIGNAL TRANSDUCTION

This program focuses on novel approaches to the modulation of drug-induced apoptosis in human leuke-mia and emphasizes molecular mechanisms involved in the regulation of signal transduction events. There are extensive opportunities to interact with a diverse faculty of cellular and molecular biologists at the Massey Cancer Center and to utilize the center's extensive core laboratory facilities. Candidates should have a strong interest in tory facilities. Candidates should have a strong interest in signal transduction; prior molecular biologic experience is preferred. The position is supported by an NCI-funded Postdoctoral Cancer Biology Training Grant. Send cur-riculum vitae and letters of reference to: Dr. Steven Grant, Massey Cancer Center, Medical College of Virginia, MCV Station Box 230, Richmond, VA 23298. MCV/VCU is an Equal Opportunity Employer. Women and minorities are encouraged to apply.

POSTDOCTORAL FELLOWSHIPS at Harvard Medical School in gene therapy and HIV pathobiology. Facilities include newly renovated and fully equipped laboratories for molecular biology and biochemistry; large dedicated P3 facility; and ready access to several animal model systems. Funding available for three years, fully commensurate

Funding available for three years, fully commensurate with experience. Qualified applicants should have some prior experience in molecular biology, virology, or he-matology. Send curriculum vitae plus letters of recom-mendation to: Ernest F. Terwilliger, Ph.D., New En-gland Deaconess Hospital, 194 Pilgrim Road, CRI-5, Boston, MA 02215.

University of Pittsburgh Pittsburgh Transplantation Institute POSTDOCTORAL FELLOWSHIP

Postdoctoral position available immediately for a Ph.D. in immunology or molecular cell biology to participate in studies on the role of antigen presenting cells in organ transplant rejection/tolerance induction. The successful applicant will work in the excellent, new Transplantation Institute, and should have a strong interest in the cellular and molecular basis of lymphocyte interest in the cellular and molecular basis of lymphocyte activation. The annual salary will be approximately \$27,000. Please submit curriculum vitae and three letters of reference to: Angus W. Thomson, D.Sc., F.R.C. Path., W1544 Biomedical Science Tower, Depart-ment of Surgery, University of Pittsburgh Medical Center, Pittsburgh, PA 15213, USA. FAX: (412) 624-1172, Telephone: (412) 624-1116.

POSTDOCTORAL FELLOW/RESEARCH AS-SOCIATE POSITION. Cytogeneticist (molecular): Gene and cancer biology. Cell-culture. Chromosomal analyses (banding), Fluorescent In Situ Hybridization (locus- and chromosome-specific probes). Good writ-ing skills. Salary competitive. Send curriculum vitae ing skills. Salary competitive. Send curriculum vitae with names and telephone numbers of three references to: Jonathan J. Li, Ph.D., Director and Professor, Division of Etiology and Prevention of Hormonal Cancers, Suite 5008 Robinson, University of Kan-sas Cancer Center, 3901 Rainbow, Kansas City, KS 66160-7312. Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL FELLOWSHIP available immediately at the Center for Advanced research in Biotechnology (CARB) for molecular biologist with recent Ph.D. to join a multidisciplinary team investigating molecular basis of antigen recognition by antibodies and T-cell receptors (TcR's). Projects include: (1) study of T-cell receptors (TcR's). Projects include: (1) study of antibody specificity by application of site-directed muta-genesis and phage display to antibodies of known 3-D structure; (2) expression of recombinant proteins for X-ray crystallography; (3) binding studies of recombi-nant TcR's to biological ligands. Experience in heterol-ogous protein expression in bacterial or mammalian cells is highly desirable. (*Curr. Opin. Immunol.* (1993) **5**, 50; *PNAS* (1994) **91**, 1089; *J. Mol. Biol.* (1994) **235**, 795). CARB is a joint research center of the National Institute of Standards and Technology and the University of Marvland. Excellent facilities and opportunities for col-Maryland. Excellent facilities and opportunities for col-laborative studies with crystallographers and physical biochemists. Send curriculum vitae and names of three references to: Dr. Roy Mariuzza, CARB, 9600 Gudel-sky Drive, Rockville, MD 20850; FAX: (301) 738-6255.

POSTDOCTORAL/RESEARCH ASSOCIATE. Two NIH-funded positions are immediately available to study transcriptional regulation of genes involved in cardiovascular diseases. Experience in molecular biology or yeast genetics desirable. Positions are for up to 5 years. Please send curriculum vitae and reference letters to: Dr. Kamal D. Mehta, Department of Biochemistry & Molecular Biology, Slot 516, University of Arkansas College of Medicine, 4301 West Markham, Little Rock, AR 72205. FAX: (501) 686-8169.

A POSTDOCTORAL RESEARCH POSITION is available to study the regulation and role of protein tyrosine kinases and protein tyrosine phosphatases in the brain. Ph.D./M.D. with strong background in biochemistry/molecular biology and/or neurobiology are pre-ferred. Please submit curriculum vitae and names of three references to: Shalom Avraham, M.D., Ph.D., and Jerome E. Groopman, M.D., Division of Hematolo-gy/Oncology, Harvard Medical School, New England Deaconess Hospital, 185 Pilgrim Road, Boston, MA 02215. (FAX: 617-424-6237).

POSTDOCTORAL RESEARCH POSITION

A postdoctoral position is available immediately to study insect membrane receptors for the insecticidal protein of *Bacillus thuringiensis*. The project includes the cloning and characterization of membrane receptors as well as characterization of insecticidal protein/membrane receptor complexes. Interested candidates should have a Ph.D. with strong background in molecular biology and biochemistry. Send curriculum vitae with the names of three references to: Dr. Lee Bulla, Department of Molecular Biology, University of Wyoming, P.O. Box 3944, University of Wyoming, Laramie, WY 82071– 3944. Telephone: 307-766-3300; FAX: 307-766-5098.

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

RESEARCH ASSOCIATE for university in central Ohio. Designs and conducts experiments on regulation of the glycoside receptor, Na,K-ATPase, at molecular levels, including characterization of encoding genes and cDNA's using enzymatic and immunocytochemical as-says after gene-transfer in cells. Requires M.S. in biolog-ical/health sciences, or five-year M.D., and 2 years of experience in above-described duties or in Na,K-ATPase experience in above-described duties or in Na,K-ATPase regulation using monoclonal antibody, recombinant DNA techniques (gene cloning, sequencing and muta-genesis), primary skeletal and cardiac tissue culture, DNA-transfection, microinjection, voltage clamp and *in vitro* transcription and translation. Forty hours per week, 8:00 a.m. to 5:00 p.m. Monday to Friday, \$24,000 per year. Send résumé in duplicate (no calls) to: J. Davies, JO#1333305, Ohio Bureau of Employment Services, P.O. Box 1618, Columbus, OH 43216.

RESEARCH ASSOCIATES

(1) To study neuromuscular development and the effect of the nerve on the expression of muscle specific genes. (2) To study gene therapy using myoblasts as vectors. Applicants should have a Ph.D. in one of the Biological Sciences and research experience with immunity in the statement of the sta Biological Sciences and research experience with immu-nocytochemistry or molecular biology; research experi-ence in muscle biology would be helpful. Reply with curriculum vitae to: Dr. Marcia Ontell, Department of Cell Biology and Physiology, University of Pitts-burgh School of Medicine, 3550 Terrace Street, Pitts-burgh, PA 15261. The University of Pittsburgh is an Equal Opportunity/Affirmative Action Employer.

MICROBIOLOGIST

The Foreign Animal Disease Diagnostic Laboratory, USDA, APHIS, on Plum Island, New York, is recruiting for a microbiologist with experience in all standard molecular biological techniques of nucleic acid and pro-tein analysis and specific experience in DNA amplifica-tion and sequencing. Experience in DNA amplification and sequencing. Experience in protein expression and familiarity with animal viruses is desirable. Minimal educational requirement is a Bachelor's degree in the biological or chemical sciences, Master's degree pre-ferred. Must be a U.S. citizen. Starting salary is \$24,534/ \$30,012 per year. For additional information contact: Dr. Richard F. Meyer at (516) 323-2500, extension 388 or 256.

THE FEDERAL GOVERNMENT IS AN EQUAL OPPORTUNITY EMPLOYER.

The Center for Tropical Diseases of The University of Texas Medical Branch (UTMB) at Galveston invites applications for a rewarding tenure-track faculty position in research. Applicants should have a Ph.D. or M.D. degree and a minimum of two years postdoctoral research experience. A number of positions are being established ranging in faculty rank from Assistant Professor to full Professor. The Center is seeking individuals with a strong record of scientific achievement and one with a research interest in HIV and/or HTLV-I pathogenesis or AIDS. Expertise in the areas of molecular biology and/or biochemistry are essential. Duties will include developing and maintaining a strong independent research program, interacting with other faculty investigating the pathobiology and immunobiology of other retroviruses, seeking extramural funding, and participating in medical and graduate education. This appointment will also include membership in UTMB's Retrovirus Research Program which provides resources and other faculty with whom to interact. UTMB employs more than 9,100 people and consists of four schools, seven hospitals and two research institutes. The Center for Tropical Diseases under the auspices of the Department of Pathology, includes both clinical and basic scientists. Interested applicants should send a detailed curriculum vitae, an outline of current and future research interests, recent reprints, and three letters of reference to: David H. Walker, M.D., Director, Center for Tropical Diseases, The University of Texas Medical Branch, 301 University Blvd., Galveston, TX 77555-0609. UTMB is an equal opportunity affirmative action employer M/F/D/V. UTMB is a smoke-free/drug-free work place. UTMB hires only individuals authorized to work in the U.S.

ALLERVAX CAT® PHASE II CLINICAL TRIALS IN PROGRESS

At ImmuLogic,

we're taking a novel approach to the treatment of allergies and autoimmune diseases based on proprietary discoveries, an advanced molecular understanding, and innovative thinking. By targeting the initiating events in the immune system known as the Recognition Triad. we're developing products that will control, rather than mediate the reaction. Our ALLERVAX® products can potentially cause T cells to become nonresponsive, and convert an allergic or disease reaction to a normal one. Our initial results are a promise of what's to come: already our lead therapeutic, ALLERVAX CAT, for allergy to cats, is in Phase II Clinical Trials, with the potential to realize our vision of a new paradigm for treating immune disorders.

Driving The Creation Of Powerful Solutions

Sr. Research Scientist -

Protein Chemistry

In this key position, you will be a major contributor to the scientific direction of the protein chemistry group and will supervise junior staff members. You'll design and implement protocols for the purification of native and/or recombinant allergens as well as scale-up designed protocols and transfer technology to the process development group. Additionally, you'll establish a series of analytical techniques for the evaluation of purified allergens and will demonstrate purity and reproducibility of developed procedures. Requires a Ph.D. and a minimum of 10 years of experience in protein chemistry or a related discipline. Excellent communication and organization skills are essential. Industrial experience strongly preferred. **Dept. PC.**

Our steady progress has established us as a dynamic and rapidly expanding biopharmaceutical leader: our key industry partnerships and first-rate team of scientific professionals are taking us even further. We offer exceptional opportunities for growth, support for your career development, and rewards that include a competitive compensation and benefits package. Please send your CV, referencing the department, to: Human Resources Department, ImmuLogic Pharmaceutical Corporation, 610 Lincoln Street, Waltham, MA 02154. An equal opportunity employer. Principals.



North American Vaccine, Inc., a rapidly expanding company dedicated to the research, development and manufacturing of vaccines, has immediate openings for scientists within our Research Group.

Protein Chemist

Candidates should possess a Ph.D. in biochemistry or chemistry and be knowledgeable in all aspects of protein isolation and characterization. 2-4 years of postdoctoral experience in protein chemistry is essential.

Future openings may also be available for individuals with a Ph.D. in Microbiology, Virology or related field for the generation of mutant virus species for potential use in vaccines.

We are located in Beltsville, Maryland 20 minutes north of Washington, DC. We offer competitive salaries and benefits.

Excellent verbal and written communication skills are required for all positions. Interested individuals should send a curriculum vitae to: Manager, Human Resources



NORTH AMERICAN VACCINE, INC. c/o AMVAX, Inc. 12103 Indian Creek Court Beltsville, MD 20705-4223

Fax: (301) 470-6198

EOE/AA

Please stop by to see us at the Biotechnology/Pharmaceutical Job Fair in Chevy Chase, Maryland on May 13 and 14.

ASSOCIATES

DIRECTOR, MOLECULAR BIOLOGY

MICROBIOLOGICAL ASSOCIATES (MA) is a leading international provider of biological and toxicological testing services to the pharmaceutical, personal care and biotechnology industries. Our company's rapid growth has created an opportunity for an experienced manager to join our technical staff and direct MA's molecular biology development activities.

The Director of Molecular Biology will direct MA's molecular biology development efforts and support our commercial GLP / cGMP molecular biology testing operations. The successful candidate will have a proven track record in molecular virology, toxicology, oncology, cell biology or mammalian cell systems.

An individual with a Ph.D. and 5+ years laboratory management experience would be an ideal fit for this position.

For immediate consideration, please forward your C.V. or resume to the attention of Human Resources:

MICROBIOLOGICAL ASSOCIATES 9900 Blackwell Road Rockville, Maryland 20850 EOE m/f/d/v

Quality... At the Heart of What We Do.

North American Biologicals, Inc. (NABI), is a world leader in source plasma collection/supply and diagnostic technology, maintaining both large-volume lab and diagnostic manufacturing facilities, and now our new Immunotherapeutics Manufacturing Division.

Bioprocessing Technicians

Responsibilities include purification of gamma globulin from human plasma by alcohol fractionation, chromatographic purification of antibodies, sterile filtration, and serum processing.

A Biological Science degree with a minimum of 2 years biological manufacturing experience under GMP is required. Must be competent in the operation of basic manufacturing equipment including PH meters, centrifuges, balances, filtration equipment and have an understanding of aseptic technique.

One of these positions is an excellent opportunity for a Senior Bioprocessing Technician. We're seeking a highly motivated individual with excellent fractionation skills and knowledge of GMP and FDA regulations to participate in the development and growth of our Immunotherapy Division. In addition to the above requirements, a minimum of 2 years experience in plasma fractionation and antibody purification at production scale is required. Must have extensive "hands on" experience in alcohol (Cohn) fractionation of plasma, and competency in the operation of all associated process scale equipment.

NABI will provide an outstanding, professional working environment, a very competitive salary and generous benefits package. Please forward your resume with salary history to:

> Director, Human Resources North American Biologicals, Inc. P.O. Box 692222 Miami, FL 33269



An Equal Opportunity Employer M/F/D/V

GENENCOR INTERNATIONAL, a world leader in the use of biotechnology for research, development and manufacture of industrial enzymes and fine specialty chemicals has two immediate openings in the **SAN FRANCISCO BAY AREA**.

SCIENTIST

Biochemist with expertise in purification and characterization of proteins from natural and recombinant sources at the research and production scale, working on an aggressive protein engineering project directed at novel enzyme activities. The incumbent will have a PhD in Chemistry/Biochemistry or Chemical Engineering, at least two years of post doctoral experience, and a track record of excellence in laboratory work. Knowledge of peptide chemistry, protein sequencing, and separation technology would be an asset. (Dept. CP)

POSTDOCTORAL FELLOW

In this position, you will work on the engineering of enzymes and enzyme complex through molecular biology techniques. The research will focus on the design, construction, evaluation, as well as the application of the engineered enzyme complex. The successful candidate must have a doctorate degree in a Biology or Chemistry discipline with interest in molecular biology, protein structure, and enzymology. (Dept. CL)

We offer a challenging and rewarding work environment, combined with a competitive compensation and benefits package. To apply, please send or FAX your resume, indicating the appropriate department code, to: Genencor International, Inc., Attn: HR Department-S, 180 Kimball Way, South San Francisco, CA 94080. FAX: (415) 583-8269. EOE M/F/D/V. Women and minorities are encourage to apply.



DELIVERING INNOVATION THROUGH BIOTECHNOLOGY



Mammalian Geneticist

Unique opportunity to participate in the expansion of McLaughlin Research Institute, a small mammalian genetics center in Great Falls, Montana. The Institute offers a nonbureaucratic, interactive research environment and participation in the Institute's future development. We have recently moved into a new research building with a large mouse facility. Applicants should have an NIHsupported research program, or be highly likely to obtain independent support. Developmental biologists, molecular geneticists, and neurogeneticists whose research emphasizes mouse models are particularly encouraged to apply.

Applications, including names of individuals we may contact for references, should be addressed to:

George A. Carlson, Ph.D. Director, McLaughlin Research Institute 1520 23rd Street South Great Falls, MT 59405

For additional information contact George Carlson, Bill Crain or Doug Coffin at MRI, or any of the following members of our Scientific Advisory Committee: Irv Weissman, David Baltimore, David Cameron, Bruce Chesebro, Neal Copeland, Jeff Frelinger, Leroy Hood, or Nancy Jenkins.

An Equal Opportunity/Affirmative Action Employer

DEPUTY DIRECTOR AAAS, PROJECT 2061

Project 2061 is a long-term reform initiative of the American Association for the Advancement of Science (AAAS) to reform K-12 education nationwide so that all high-school graduates are science literate.

We are seeking an experienced Deputy Director to coordinate the integration of Dissemination, Curriculum Development, Research and Evaluation, and Implementation activities of Project 2061, serving as Acting Director during Director's absence. Individual will represent and speak on behalf of Project 2061 at professional meetings, conferences, special presentations and other events; participate in special presentations and other events; participate in special research, dissemination, curriculum development and implementation projects; provide overall direction and supervision to all fiscal and administrative operations related to Project 2061; participate in efforts to identify and secure external grants and/or contracts to support activities of Project 2061; serve as principal negotiator on terms and specifications of contracts, grants, and/or other agreements between the Project and potential funding sources; maintain his/her own research interests and activities through development of papers, articles, speeches, and/or other scholarly materials.

Position requires a doctoral degree in education, a scientific discipline, or related field(s); 10-15 years related work experience (education, research and development at a college, university, government agency, professional association or related group); specific experience managing multi-year projects with multiple staff and funded by an external agency, including securing support from those agencies. Documented record of scholarly publishing, in pro-fressional journals or other publications in the appropriate field(s).

For immediate consideration send resume and cover letter with salary requirements to the AAAS, Human Resources Dept. attn: #DD-902, 1333 H St., N.W. #128, Wash., D.C. 20005. The AAAS is an equal opportunity employer and has a non-smoking work environment.



U.S. EPA OFFICE OF RESEARCH AND DEVELOPMENT DERMAL EXPOSURE AND ABSORPTION OF TOXIC SUBSTANCES

The Environmental Protection Agency's Office of Health and Environmental Assessment (OHEA) in Washington, DC and the Environmental Monitoring Systems Laboratory, in Las Vegas NV (EMSL-LV) of the Office of Research and Development (ORD) are seeking assistance by cooperative agreements with non-profit or notfor-profit research organizations to collaborate in research on dermal exposure and absorption of toxic substances. Such agreements require a minimum of 5% cost sharing by the recipient organization. A high degree of collaboration with the EPA researchers involved in these activities is required (e.g. joint planning and conduct of most tasks and co-authored publications). The proposed work will support the research and development methodologies on dermal exposure and absorption of toxic chemicals from multimedia, including volatile and non-volatile organic compounds, metals, highly lipophilic compounds found in industrial formulations, water, soil and air and on surfaces. Proposals will be accepted in the following areas: (1) Field and laboratory studies with human subjects to determine dermal adherence of soil resulting from gardening and outdoor recreation and dust resulting from indoor residential non-occupational activities, (2) Laboratory studies with animal models and <u>in vitro</u> systems to determine the dermal contact and transfer of toxic chemicals, specifically pesticide residues, from treated surfaces in residential non-occupational environments, (3) Laboratory studies with animal models to determine dermal absorption and disposition of toxic chemical 's from multimedia, and (4) The development of quantitative structure activity relationships (QSAR) in relation to hysiologically-based pharmacokinetic (PB-PK) models of dermal absorption that may be used to predict dermal absorption and disposition of chemicals, specifically pesticide residues, that have been transferred from multimedia to the surface of the skin. Proposals will be evaluated by expert review panels based on the proposer' experience Miles Inc., Pharmaceutical Division, a rapidly expanding, highly progressive company, offers exceptional growth and advancement opportunities. Join our team-oriented, interdisciplinary environment in West Haven, CT.

Senior Research Scientist

We currently have a **Senior Research Scientist** position available in the Institute for Molecular Biologicals within the **Biotechnology Unit**. The position requires a Ph.D. (or equivalent experience) in Molecular Biology or related field with 4 or more years of postdoctoral or industrial experience.

The primary responsibility of the position will be to take a lead role in the isolation and modification of genes involved in a variety of human diseases. The successful candidate must possess extensive knowledge and proven experience in the state-of-the-art gene cloning, isolation, and protein expression in both prokaryotic and mammalian systems. In addition to conventional molecular biology methodologies, expertise of the candidate should include many of the following skills: genomic library construction, use of YAC vectors, PCR and RT-PCR, subtractive or expression cloning, peptide display library. Familiarity and working experience with human diseases is desirable. Strong oral and written communication skills, and an ability to work in a team-oriented environment is essential. The position would entail supervision of BS and/or MS level Research Associates.

We offer attractive compensation commensurate with qualifications, generous benefits, and an excellent opportunity for personal growth and professional satisfaction. Resumes, including salary requirements, should be forwarded to: **Miles Inc.**, **Pharmaceutical Division, Dept. ADAS, 400 Morgan Lane, West Haven, CT 06516.** An Equal Opportunity Employer M/F/D/V.



Pharmaceutical Division

POSITIONS OPEN

Anticipated POSTDOCTORAL RESEARCHER (2 Positions) Department of Animal Science, Baton Rouge, Louisiana

Ph.D. in Reproductive Biology, Molecular Biology or Genetic Engineering is required. Experience in large ani-mal research is desired. Responsibilities: work on early development of bovine embryos produced by vitro fertili-zation and/or control of bovine corpus luteum function. Salary is commensurate with qualifications and experience. Salary is commensurate with qualifications and experience. Benefits include University holidays, earned annual and sick leave and optional group hospitalization and life insurance. Anticipated hire date is July 1, 1994, "Pending Final Approval". Application deadline is June 15, 1994, or until suitable applicant is found. Submit biographical data, résumé of experience, academic transcripts and have there leaves of experience for granded to: three letters of recommendation forwarded to:

Gordon D. Cain Professor of Animal Physiology Department of Animal Science 251 Dalrymple Hall Louisiana State University Baton Rouge, LA 70803 Telephone: (504) 388-5419, FAX: (504) 388-3279

LSU IS AN EOUAL OPPORTUNITY/AFFIRMA-TIVE ACTION EMPLOYER.

RESEARCH ASSOCIATE

The Division of Molecular Virology and Immunology, Department of Microbiology and Immunology, of Georgetown University Medical Center seeks a candidate for a Research Associate position. Program emphasis will be on DNA sequencing and analysis of the human immunodeficiency virus with support in all other areas of a molecular biology laboratory. A high level of interaca molecular biology laboratory. A high level of interac-tion with requesting investigators and data analysis is required. The candidate should possess an M.S. or Ph.D. with training in sequence analysis, oligonucleotide syn-thesis, nucleic acid extractions, blot analysis of both protein and nucleic acid samples, biological and bio-chemical assays, computer data entry and other molecular biology techniques. Salary and academic appointment are commensurate with experience and training. Send letter of application and curriculum vitae to: Dr. Alicia Buck-ler-White, Division of Molecular Virology and Im-munology, 5640 Fishers Lane, Rockville, MD 20852. An Affirmative Action/Equal Opportunity Employer.

RESEARCH SCIENTIST Department of Obstetrics & Gynecology Division of Gynecologic Oncology

Cedars-Sinai Medical Center, an affiliate of UCLA School of Medicine, is seeking a Research Scientist, Assistant Professor to work in our Gynecologic Oncology Research Laboratory.

Primary goal of the investigations is delineating the oncogenesis of the human ovarian surface epithelium. Studies draw upon a readily available source of human clinical materials, with a focus towards under-standing genetic alterations in ovarian carcinomas and stroma-epithelial interactions in the human ovary.

Candidates must have a Ph.D. and demonstrated experience in cell and molecular biology. This well-funded position offers a competitive salary and comprehensive benefits. Please submit curriculum vitae with names and address of three references to: Rebecca Chandler, Employee Relations, CEDARS-SINAI MEDICAL CENTER, 8723 Alden Drive, Los Angeles, CA 90046. Affirmative Action/Equal Op-portunity Employer.

RESEARCH PHARMACOLOGIST

NEUREX, a biopharmaceutical company in the San NEUREX, a biopharmaceutical company in the San Francisco Bay Area, is seeking a highly motivated, dy-namic Pharmacologist with a background in the areas of small animal surgery, global/focal cerebral ischemia, and biochemistry. Must have experience developing *in vivo* and *in vitro* model systems for the evaluation of neuro-active agents. Requires a Ph.D. with 2 plus years of related experience. Pharmaceutical industry experience would be an advantage. Send résumé to: SB-SII, Neu-rex Corporation, 3760 Haven Avenue, Menlo Park, CA 94025. CA 94025.

POSITIONS OPEN

RESEARCH STAFF ASSOCIATE: Position in a stroke study at the Columbia Presbyterian Medical Cen-ter. Preference for those with B.S., M.S., or MPH in epidemiology and prior clinical experience. Duties include: supervision of data collection staff, review of medical information, patient interviews, data analysis, and writing reports. Address inquiries to: Ralph Sacco, M.D., Neurological Institute, Room 547, 710 West 168th Street, New York, NY 10032. An Affirmative Action/Equal Opportunity Employer.

Several RESEARCH ASSOCIATE/SENIOR RE-SEARCH ASSISTANT positions are available immediately to study cellular and molecular mechanisms involved in the regulation of cell proliferation and sphin-gomyclinase (*Adv. Lipid Res.* **26**:25–48, 1993). Experi-ence in molecular biology, signal transduction mechanisms and/or glycobiology is desirable. Send cur-riculum vitae, names, telephone number and FAX number of three references to: Dr. Subroto Chatterjee, Department of Pediatrics, Johns Hopkins University, School of Medicine, Baltimore, MD 21287–3654 or FAX: 410-955-1276.

ASSISTANT RESEARCH SCIENTIST

POSTDOCTORAL POSITION available in the lab of Dr. Michael Garabedian to study signal transduction via steroid hormone receptors. Experiments will utilize mammalian systems in conjunction with genetic screens and selec-tions in yeast. Background in molecular biology required. tions in yeast. Background in molecular biology required. Experience in yeast genetics, biochemistry or protein expres-sion in insect cells using baculovirus preferred. Please submit curriculum vitae and names of three references to: Maha Singh, Human Resources Department, NYU Medical Center, 550 First Avenue, Area GBH, New York, NY 10016. Equal Opportunity Employer.

STAFF SCIENTIST Center for Biomedical Research The Population Council

The Population Council is seeking a Biomedical Scien-tist/Formulation Specialist to join its contraceptive Re-search and Development Program. Qualifications include a Ph.D. or equivalent degree in pharmaceutical chemistry, pharmacy, or related fields, extensive experience in drug formulation and controlled release delivery systems, excellent writing and communications skills in English, a minimum of 5 years of experience in the pharmaceutical field, and evidence of a strong scientific background. Salary will depend upon qualifications and experience. Excellent ben-efits. Forward curriculum vitae and names and addresses of at least three references to: **Dr. Rosemarie Thau, The** Population Council, Center for Biomedical Research, 1230 York Avenue, New York, NY 10021. An Equal Opportunity Employer—M/F.

IMMUNOGENETICIST

The National Marrow Donor Program has a position available for an immunogeneticist (Ph.D. or M.D.) with experience in histocompatibility issues relevant to unre-lated donor marrow transplantation. The scientist will provide leadership in HLA typing strategies, and work closely with the Program's Histocompatibility Commit-tee. It is expected that this position will be held in conjunction with a feature framework of the test of the test of the test. tee. It is expected that this position will be held in conjunction with a faculty/research appointment at the University of Minnesota. Send curriculum vitae by April 30, 1994, to: Dr. Craig W. S. Howe, Chief Executive Officer, National Marrow Donor Program, 3433 Broadway Street N.E., Minneapolis, MN 55314. Equal Employment Opportunity/M/F/V/H.

ACADEMIC ELECTROPHYSIOLOGIST—avail-able July 1994. Requires board certification in cardiology, board eligibility in electrophysiology, at least 16 months of EPS training, 8 months of EPS attending, demonstrated research productivity in (1) local human repolarization and (2) the AV node, highly proficient in ablations and pace-makers. Position includes clinical research, patient care, and teaching. Please submit curriculum vitae, 3 letters of recom-mendation and reprints to: Vickye Gammaer VA Medical mendation and reprints to: Vickye Gammage, VA Medical Center West Los Angeles, Human Resources (05), Wilshire and Sawtelle Boulevard, Los Angeles, CA

POSITIONS OPEN

RESEARCH SCIENTIST III INSTITUTE FOR THE STUDY OF EARTH, OCEANS AND SPACE UNIVERSITY OF NEW HAMPSHIRE Grant-Funded

Task Force Executive Officer to plan, develop and implement research activities for the Task Force on "Glob-al Analysis, Interpretation and Modelling" (GAIM) of the International Geosphere Biosphere Program (IGBP). Re-sponsibilities include: Administration of the Project Office and liaison with cooperating institutions, preparation of reports and dissemination of research information and results, and organization of scientific meetings. Qualifica-tions: Ph.D. in earth sciences with 5 years of research experience, a background in modelling, and writing and editing skills. Experience in science management and/or with international interdisciplinary scientific organizations or projects preferred. Salary: \$40,370 to \$62,480; starting salary normally not to exceed \$45,900. Apply by April 30, 1994, to: Professor Berrien Moore III, GAIM Task Force Office, Room 305, Morse Hall, UNH, Durham, NH 03824. Women and minorities are encouraged to apply. UNH is an Affirmative Action/Equal Employment Opportunity Employer.



Nationwide Career Positions B.S. and M.S. level Scientists (some Ph.D. level positions available) Cell/Tissue Culture Protein Chemistry (HPLC) Microbiology Biochemistry Immunology Process Development (positions available in other disciplines) Company Fee Paid Iames E. Iannoni & Associates **Biopharmaceutical Personnel Recruiters** P.O. Box 66 Hampton, CT 06247 Telephone: 203-455-0151 FAX: 203-455-1244

GRADUATE STUDENTS

The Department of Experimental and Comparative Pathology through the Graduate Program in Infectious Disease and Experimental Pathology is seeking highly bisease and Experimental radiology is seeing highly motivated graduate students with interests in molecular virology and/or cellular immunology. Our Department has established programs in viral respiratory diseases and feline and simian AIDS, and will offer graduate stipends based on student qualifications. Preference will be given based on student qualifications. Preference will be given to those candidates with specific interest in retroviral gene regulation, retroviral vector development for gene therapy and vaccines, and cellular immunology of animal AIDS. Applicants are required to meet the graduate admission requirements. Please send curriculum vitae and names of three references to: **Dr. Janet Yamamoto**, **Dependence of Commentation and Programmetal Po** Department of Comparative and Experimental Pa-thology, P.O. Box 100145, College of Veterinary Medicine, University of Florida, Gainesville, FL 32610-0145. An Affirmative Action/Equal Opportunity Employer.

RESEARCH SCIENTIST

The Molecular Cardiology Institute, Inc. has an open-ing for an experienced, energetic, well-organized scientist willing to work long hours. The position requires a Ph.D. in Molecular Biology/Biochemistry, publications in leading journals and record of successful external grant support. Expertise is required in all aspects of Protein, DNA and RNA Analysis, PCR and RT-PCR, Polymor-bians Concerning a feature of the support phism, Sequencing, In Situ Hybridization, Transgenic, etc. The Molecular Cardiology Institute is a productive, small laboratory. Ongoing projects deal with Cardiac Growth and Development, diseases of cardiac and skeletal muscles and effect of environmental factors on the heart. Interested applicants should send curriculum vitae, neart. Interested applications include send curriculum vitac, pertinent publications, references and salary require-ments to: Jose Marin, M.D., Director, The Molecular Cardiology Institute, 75 Raritan Avenue, Highland Park, NJ 08904. FAX: 908-220-2992.

ANNOUNCEMENTS

RESEARCH INQUIRIES INVITED

The Smokeless Tobacco Research Council, Inc. invites inquiries regarding grant applications.

The Council sponsors independent research into questions of smokeless tobacco and health. Research support is through a program of grants-in-aid.

Grant applications are evaluated by the Scientific Advisory Board to the Council and will be judged solely on the basis of scientific merit and relevance.

Deadlines for submission of grant applications are December 31 for July 1 funding and June 30 for January 1 funding. Address inquiries or requests for applications to:

THE SMOKELESS TOBACCO RESEARCH COUNCIL, INC. 420 LEXINGTON AVENUE NEW YORK, NY 10170 Telephone: (212) 697-3485

COURSES AND TRAINING

HETEROGENEOUS SUPERCOMPUTING TECHNIQUES WORKSHOP FOR BIOMEDICAL RESEARCHERS Pittsburgh Supercomputing Center August 8–12, 1994

Five-day supercomputing techniques training workshop to introduce participants to the Cray C90/T3D systems. Aimed at experienced FORTRAN or C programmers. Prior supercomputing experience is not necessary. Travel expenses of U.S. researchers funded by NCRR grant. Application deadline: 1 July 1994. Contact: Nancy Blankenstein, blankens@psc.edu or FAX: 412-268-8200.

METHODS IN COMPUTATIONAL NEUROSCIENCE July 31-August 27, 1994

This is an intensive lecture/laboratory course that addresses issues relevant to computational neuroscience: the study of how the biophysical and biochemical properties of neurons and synapses, together with the architecture of neural circuits, produce animal behavior. The course program consists of two daily lectures, presented by a faculty of 30 established investigators, computer simulation tutorial projects, and an individualized modeling project. The course is designed for advanced graduate students, postdoctoral fellows, and faculty members who have trained in a variety of disciplines, including neurobiology, physics, electrical engineering, computer science, and psychology. Enrollment is limited to 23 participants.

participants. DIRECTORS: David Kleinfeld and David W. Tank, Biological Computation Research Department, AT&T Bell Laboratories, Murray Hill, New Jersey. TUITION: \$1500 (includes room and board); partial financial aid is available. APPLICATION DEAD-LINE: April 15, 1994.

For information and application form contact: Admissions Coordinator, Marine Biological Laboratory, Woods Hole, MA 02543; Telephone: (508) 548-3705, extension 401; Internet: admissions@mbl.edu.

FLOW CYTOMETRY COURSE

JUNE 6-10, 1994—COLORADO SPRINGS

An intensive introductory course covering the theory and practice of flow cytometry will be held at the University of Colorado. Instrumentation, sample preparation, data acquisition and analysis, and hands-on applications are included in this limited enrollment (8) class. The \$1,350 fee includes tuition, instructional materials, housing, breaks, and Thursday dinner at the Broadmoor Hotel. For more information contact:

Dr. Douglas Swartzendruber Department of Biology University of Colorado Colorado Springs, CO 80918 Telephone: 719-593-3181, FAX: 719-593-1239 E-mail: deswartzendr@uccs.edu Nicoderm[®], Procardia XL[®], Duragesic[®], Estraderm[®]...some of the most recognizable products in the pharmaceutical industry. We're ALZA, the company that developed these popular products. We are expanding our Biological Sciences Group, and are seeking talented, dedicated professionals to participate in the most exciting breakthroughs in pharmaceutical therapy. Join ALZA today in these San Francisco Bay Area positions.

Research Scientist/Molecular Pharmacologist

Bring your expertise in cellular/molecular pharmacology and in vitro/in vivo transport studies as you assess the biological activities of drugs throughout the transmucosal delivery process. Qualifications include a PhD in Pharmacology, Biochemistry, Cell Biology or equivalent with 3-8 years' postdoctoral experience. Of key importance is your background in molecular pharmacology and mammalian cell cultures.

Staff Scientist/Immunologist

We're seeking an experienced scientist with extensive experience in cell mediated immunity with an emphasis in contact sensitization for this high profile position. You will examine basic immune mechanisms, as well as improve cell based in vitro tests. Ideally, you will have a PhD in Immunology or equivalent with at least 2 years' postdoctoral experience. Cell culture expertise is required.

Staff Scientist/Protein Formulation Chemist

Utilize your experience in formulation development as you develop new, innovative formulations for proteins and peptides in drug delivery system pharmaceuticals. You should have a PhD in Pharmaceutical Chemistry, Biochemistry or equivalent with at least 2 years' postdoctoral experience; expertise in maintaining the functional activity of isolated proteins and peptides; and a solid background with analytical methods to characterize formulation stability.

For consideration, please send your resume, indicating position of interest, to ALZA, Human Resources, 950 Page Mill Rd., P.O. Box 10950, Palo Alto, CA 94303-0802. FAX (415) 494-5151. Or call (415) 494-5319 or our TDD line at (415) 494-5003. We are pleased to be an equal opportunity employer and encourage applications from qualified persons with disabilities. All trademarks are registered to their respective companies.

alza

The Gillette Company, a world leader in the international marketplace, currently has several challenging research opportunities available for talented, innovative scientists and engineers. Our Boston Research and Development Laboratory conducts applied research and technology development for all aspects of Gillette's diverse consumer product lines.

We're looking for individuals who are highly creative and capable of developing new programs and setting new directions.

Chemists/Chemical Engineer

Opportunities currently exist for organic chemists, biochemists and chemical engineers. A Ph.D. and evidence of exceptional creativity and technical breadth is required. Up to two years of postdoctoral or equivalent experience is desirable.

Materials Scientist

An opportunity exists for a materials scientist. This position requires a Ph.D. in Materials Science or a related field and up to two years of postdoctoral or equivalent experience. Creativity, demonstrated technical breadth, and a history of accomplishment is essential.

Plastics Engineer

An opportunity exists for a plastics engineer. A demonstrated ability to establish new programs is essential. A Bachelor's degree in mechanical, chemical or plastics engineering, plus 3-5 years of related experience is required. A master's degree plus related experience or Ph.D. is preferred.

Microbiologist

An opportunity exists for a microbiologist to carry out research in the field of oral care. A Bachelor's degree plus 3-5 years of experience or a Master's degree is required.

In addition to the opportunity to significantly impact its research and development program, Gillette offers a stable, growing business environment along with excellent salary and benefits.

Qualified candidates should submit a resume, including salary history to Kate Martucci, Human Resources, The Gillette Company, One Gillette Park, Boston, MA 02127. An Equal Opportunity Employer



Research Opportunities

Celtrix is a biopharmaceutical company engaged in the re-search and development of potential therapies for debilitating diseases associated with aging and autoimmune conditions. Currently, we are seeking the following individuals to contribute to our research efforts in the San Francisco Bay Area.

POSTDOCTORAL RESEARCHER **Molecular Biology**

You will conduct independent research to characterize a novel pathway for protein secretion in bacteria, while interacting with other team members who are applying this technology to the production of human therapeutics. Your recent doctorate in molecular biology should demonstrate a strong background in bacterial genetics, contemporary skills in nucleic acid ma-nipulation, and expertise in protein purification. Prior experi-ence with bacterial secretion systems at a genetic and biochemical level is highly desirable. Applicants must be able to assume this new position before June 15.

RESEARCH SCIENTIST

Preclinical Safety & Efficacy-Ophthalmology We are seeking a Ph.D. with postdoctoral training in the visual sciences to develop and evaluate animal models of human ophthalmic disease, and to use these models for the evaluation of novel ophthalmic therapeutics.

Along with an excellent salary and benefits package, Celtrix offers a highly stimulating R&D environment. Please send your C.V./resume, indicating position of interest, to Celtrix Pharmaceuticals, Human Resources, 3055 Patrick Henry Drive, Santa Clara, CA 95054-1815. An equal opportunity employer.

CELTRIX

St. Jude Children's Research Hospital Danny Thomas, Founder **Department of Biochemistry**

Postdoctoral Fellowships

The Biochemisty Department offers a highly interactive environment for postdoctoral research with a focus on the molecular and cellular biology of signal transduction. The research programs within the Department offer recent Ph.D or M.D. graduates comprehensive training in a large variety of contemporary molecular and biochemical techniques. Laboratory facilities are housed in a new 220,000 sq. ft. research facility. SJCRH offers competitive salaries and fringe benefits. Current research programs within the Department include:

John Cleveland:	<i>Myc</i> oncogene control of cell cycle progression, apoptosis and transcription.
James N. Ihle:	Mechanisms of hematopoietic stem cell growth regulation, differentiation and transformation.
Paul Ney:	Transcriptional regulation of globin gene expression and erythroid differentiation.
Suzanne Jackowski:	Cell cycle regulation of membrane phospholipid biosynthesis.
Charles Rock:	Role of phospholipid-derived second messengers in growth factor signal transduction.
Robert Rooney:	Mechanisms of transcription factor regulation by the E1A oncogene.
Brian Sorrentino:	Retrovirally mediated transfer of drug resistance genes to hematopoietic stem cells.
Gerard Zambetti:	Function of wild-type and mutant p53 in tumor suppression and oncogenesis.
	licants should submit a brief statement of research rests, curriculum vitae and the names of three refer-



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22 April 1994 Issue

COLD SPRING HARBOR LABORATORY CONFERENCE ON MOLECULAR APPROACHES TO THE CONTROL OF INFECTIOUS DISEASES October 5-9, 1994

ORGANIZED BY:

Fred Brown, USDA, Plum Island Animal Disease Center **Robert Chanock,** NIAID, National Institutes of Health Harold Ginsberg, Columbia University College of P & S Erling Norrby, Karolinska Institute, Sweden

You are cordially invited to participate in a meeting on Molecular Approaches to the Control of Infectious Diseases, with particular emphasis on immunological aspects and immunization. The meeting will be held at Cold Spring Harbor Laboratory beginning on Wednesday, October 5th at 7:30 pm and will conclude with lunch on Sunday, October 9th. The following keynote speakers have accepted to attend:

TOPICS

Cellular Immunity Antibody Engineering Bacterial Toxins Live Vectors Vaccination against Parasitic Diseases Mucosal Immunity DNA Immunization Immunological Memory

SPEAKERS

Jay Berzofsky, National Institutes of Health Dennis Burton, Scripps Research Institute John Collier, Harvard Medical School Roy Curtiss, University of Washington, St. Louis Adel Mahmood, Case Westen Reserve University Ian Ramshaw, University of Washington, St. Louis Harriet Robinson, University of Massachusetts Medical Center Rolf Zinkernagel, University of Zurich, Switzerland

The meeting will also host the Albert B. Sabin Vaccine Foundation's inaugural lecture and presentation of the First Gold Medal Award for outstanding achievement in the field of vaccines in honor of the man who developed the oral polio vaccine. Please note that abstracts must arrive at the meetings office by the abstract deadline, July 27, 1994. Selection of material for oral and poster presentation will be made by organizers. Please apply early as numbers are limited. For additional forms and information, please contact:

Meetings Coordinator Cold Spring Harbor Laboratory 1 Bungtown Road, Cold Spring Harbor, NY 11724-2213 516-367-8346 • FAX: 516-367-8845 • e-mail meetings@cshl.org



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AlphaGene, founded by scientists at Harvard Medical School, is located in Cambridge, MA, amidst strong academic institutions and a growing community of "leading-edge" biotechnology companies. AlphaGene offers a competitive salary, a generous benefits package, opportunities for growth, and an "environment of excellence" for professional and commercial success. Qualified candidates are requested to submit, in confidence, a cover letter, their curriculum vitae, and two references to: Dr. George Scheele, AlphaGene Resources, 60 Glen Road, Suite 302, Brookline, MA 02146. An Equal Opportunity Employer M/F/D/V.

The State University of New Jersey R U T G E R S PROFESSOR AND CHAIR DEPT. OF ENVIRONMENTAL SCIENCES

Rutgers, the State University of New Jersey invites nominations and applications for a senior faculty position at the rank of Professor. The successful candidate will also be appointed Chair of the Department of Environmental Sciences. The University and the New Jersey Agricultural Experiment Station are committed to strong support and expansion of the Environmental Sciences and Engineering areas. Significant additions to laboratory specs (15,000 sq. ft.) and six new faculty positions in the department are planned over the next three years. Currently the Department has 13 full time faculty, is in the process of filling 4 positions and occupies more than 55,000 sq. ft. of laboratory and office space. The position entails leading a growing department within a University with exceptional

The position entails leading a growing department within a University with exceptional depth in the area of the environment, from the molecular to the ecosystem level and from the fundamental to the applied sciences. The successful candidate will be expected to take an active role in integrating departmental activities with other University programs and thrusts in the environmental area. The candidate must be eligible for a tenured position at the rank of Professor, have a Ph.D., an understanding of the multidisciplinary needs in the environmental field and creative ideas for the future. A wellestablished reputation in a field of environmental science or engineering, a record of substantial grant support and administrative and leadership skills also are required. Appointment is anticipated to be at Professor level. Salary will be commensurate with qualifications. Applications with CV's and names of three

Applications with CV's and names of three referees, nominations, and requests for further information should be addressed to Dr. L.Y. Young, Search Committee Chair, Center for Agricultural Molecular Biology, Cook College, P.O. Box 231, Rutgers University, New Brunswick, NJ 08903.

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Bewerbungen mit den üblichen Unterlagen einschließlich der zehn wichtigsten Originalarbeiten werden bis zum 29.04.1994 an den Dekan der Medizinischen Fakultät der Westfällschen Wilhelms-Universität Münster, Domagkstraße 3, D-48149 Münster, erbeten.

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Deutsches Krebsforschungszentrum Division of Applied Immunology (Prof. Dr. Stefan C. Meuer)

Applications are invited for a twoyear position of a Postdoctoral Research Fellow to study molecular mechanisms of signal transduction through accessory receptors of human T lymphocytes as they relate to normal and malignant growth and differentiation. The ideal candidate would have experience with molecular biology, biochemistry, and/or cell biology. Applicants should possess a Ph.D. or M.D. Please submit a curriculum vitae, list of publications and two letters of recommendation to:

German Cancer Research Center Im Neuenheimer Feld 280 D-69120 Heidelberg

Chairperson Division of Biology California Institute of Technology

The Division of Biology invites applications for the position of Chairperson. The faculty of 30 seeks a Chairwith inter-disciplinary interests that mesh with the strengths of the current faculty. The successful candidate will oversee a significant growth in the presence of Biology at Caltech, through growth in the Biology faculty, planning and construction of new facilities and laboratories, and development of interdisciplinary programs with other Divisions.

Interested parties should write to: Professor Scott E. Fraser, Beckman Institute (139-74), California Institute of Technology, Pasadena, CA 91125.

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Molecular Strategies for Drug Design

Friday, May 13, 1994 La Fonda Santa Fe, New Mexico

Dr. Claudio Cavazza - Sigma Tau Pharmaceuticals, Rome, Italy, "Molecular Strategies for Drug Design - A Commercial Perspective"

Dr. Larry Gold - Molecular, Cellular and Developmental Biology, University of Colorado, and NeXagen, Inc., Boulder, CO, "Oligonucleotides as Novel Therapeutic and Diagnostic Agents"

Dr. Jiri Novotny - Macromolecular Modeling, Bristol-Myers Squibb Research Institute, Princeton, New Jersey, "Origin of Biological Specificity in Protein-Protein Complexes"

Dr. Peter Tobias - Immunology, The Scripps Research Institute, La Jolla, California, "Molecular and Cellular Recognition of Endotoxin"

Plus Poster Session and Reception

Principal Sponsors: The University of New Mexico Cancer Research and Treatment Center, and the Office of the Associate Provost for Research, and the Los Alamos National Laboratories Life Sciences Division.

Program starts at 9:00 a.m.

Pre-Registration fee: Faculty and staff -- \$20.00; students free if preregistered (before 4/22/94). On-site registration at 8:30 a.m. -- \$25.00 faculty and staff; students - \$5.00. For information concerning registration or submission of abstracts, call Melinda Guerrero at UNM Cell Biology, 505/277-6636 or fax 505/277-9494. For overnight hotel reservations at conference rate, call La Fonda at 1-800-523-5002 and mention the UNM Structural Biology Symposium.

Emory University School of Medicine Department of Biochemistry

EMINENT SCHOLAR IN X-RAY CRYSTALLOGRAPHY OF BIOLOGICAL MACROMOLECULES

Applications are invited for an endowed professorship as a Georgia Research Alliance Eminent Scholar in X-Ray crystallography of biological macromolecules. The Scholar will establish a state-of-the-art X-ray diffraction facility in new research space, maintain an active research program, and will participate in the recruitment of a junior level faculty member in biological X-ray crystallography. Applicants are expected to have an internationally recognized research program. Send a letter briefly describing research program, a curriculum vitae, and the names of three references by May 31, 1994 to: Dr. Alfred Merrill, Department of Biochemistry, Emory University Medical School, Atlanta, GA 30322. Phone: (404)727-5978. FAX: (404)727-3954.

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